

**NEW** iOS 9 FEATURES THAT WILL TRANSFORM YOUR iPhone!

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# Macworld

ADG | UNITED KINGDOM

NOVEMBER 2015

# OS X EL CAPITAN



## THE BEST FEATURES

Why you should download El Capitan now

**+ OS X EL CAPITAN REVIEW**

**iPhone 6S &  
6S PLUS  
REVIEW**



Why WatchOS 2  
makes Apple  
Watch great



# Welcome...

Apple has a habit of releasing a whole wave of new hardware and software at this time of year, and this autumn has been no different. The past month has been packed with new products, including the iPhone 6s and 6s Plus, iOS 9 and OS X El Capitan. And there's more to come, with the iPad Pro and new Apple TV just around the corner. Thanks to Apple, Christmas has come early.

Over the past few weeks we've seen the launch of the new iPhone 6s and the 6s Plus. We've been using both of these and they are reviewed on pages 38 and 50, find out what we think about the new features including 3D Touch, Live Photos and the new Rose Gold model. Existing iPhone users haven't been left out: iOS 9 has also launched and can be downloaded to iPads and iPhones now. We reveal our favourite features on page 83.

We've also seen OS X El Capitan, the latest version of Apple's Mac operating system hit our Macs, also reviewed on page 60. We love the new features such as the improved Spotlight and Mission Control with Split View.

In this issue we also take a look at watchOS 2 – the latest update to the Apple Watch software that we think improves the Watch significantly – it's not only an essential update, it's a great reason to buy a Watch if you haven't yet. Find out more on page 76.

We hope you've enjoyed the issue. Feel free to send us your feedback via [facebook.com/MacworldUK](https://facebook.com/MacworldUK) or email [karen\\_haslam@idg.co.uk](mailto:karen_haslam@idg.co.uk).

# Bumper iPhone sales

Apple sells 13 million iPhones during 6s launch week

Apple expected to break records with sales of the iPhone 6s and 6s Plus on launch weekend, and it was right on target. The company sold more than 13 million new iPhones in 12 countries, beating last year's opening weekend record of 10 million phones sold.

"Sales for iPhone 6s and 6s Plus have been phenomenal, blowing past any previous first weekend sales results in Apple's history," Apple CEO Tim Cook said in a press announcement. "Customers' feedback is incredible and they are loving 3D Touch and Live Photos, and we can't wait to bring iPhone 6s and iPhone 6s Plus to customers in even more countries"

**The story behind the story:** It's important to note that China was one of the launch countries this time around, which was not the case last year. The iPhone 6 and 6 Plus went on sale in China on 17 October, 2014, nearly a month after hitting the shelves here in the UK. But Apple will only be able to include sales through Saturday 26 September in its fourth-quarter earnings report. Sales from 27 September on will be bundled in to Apple's holiday quarter results, which we'll hear about in January.





## Record-breaking upgrade

More than 50 percent of iPads and iPhones running iOS 9

**A**fter just one, Apple reported that more than 50 percent of devices had adopted iOS 9. That means it's on track to become Apple's most popular software upgrade of all time.

**The story behind the story:** It took nearly a month for Apple's last major iOS upgrade to reach 50 percent of devices. Why? iOS 8 was huge. People with 16GB iPhones who wanted to upgrade over the air were faced with the problem of having to delete apps just to make room for the upgrade, which was a major hassle. Then there was iOS 8.1, released just a week later, which bricked some phones as soon as it launched. iOS 9 is much smaller than iOS 8, at 1.3GB versus 4.58GB, and adds a new feature where you can temporarily delete apps to make room for the upgrade, then get them back (with all user data intact) after installing.



## El Capitan's top features

The improvements that make upgrading worthwhile

**E**l Capitan adds some power under the hood, bringing Apple's Metal APIs over from iOS, which lets apps take better advantage of your Mac's graphics processor for increased performance. If that doesn't sound very exciting, not to worry: Apple has tossed in some improvements for users like us, too. Here are the little changes that have made the biggest difference in our workflow – and how to put them to work for you, too.



1.

## 1. Split View

Split View in El Capitan makes full-screen mode twice as useful by letting you divide your screen between two apps. Here's how to make it work.

You need to have both windows open already. Pick one, and press and hold the green button in the upper-left corner – the same button you'd press to go full-screen. After a second, half of your screen will glow blue. Drop the window into that half, or drag it into the other half. That opens it in exactly half your screen. The other half will show thumbnails of every other window you have open. Click the one you want open on the other side. If you don't want a 50/50 split, you can drag the black bar down the middle to one side or the other. To get back, hover your cursor at the very top of your screen to reveal the menu bar, along with the controls for each of your two open windows. Click the green button on either window to go back to normal.



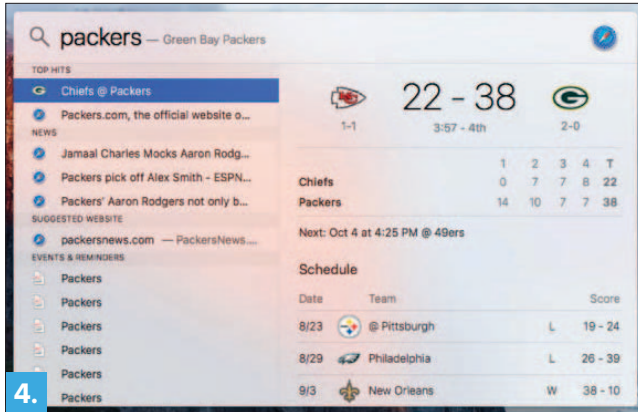
## 2. Mission Control

The new Mission Control works in the same way as the old one, but its cleaner, brighter design makes us want to use it more. Swiping up on the trackpad reveals a view of every open window on your desktop without stacking them by app like Yosemite does, so you can find the exact one you want. (If you liked having them stacked, head to System Preferences > Mission Control, and select 'Group windows by application'.)

## 3. Shake the mouse

If you lose track of the cursor, you can shake your mouse – or rub your finger quickly on the trackpad as if you were shaking a mouse – and the cursor will grow in size so you can see it. Since some apps make it go away or change it to the less-visible text-insertion offering – text editor, for example – this could come in handy.





## 4. Spotlight shines brighter

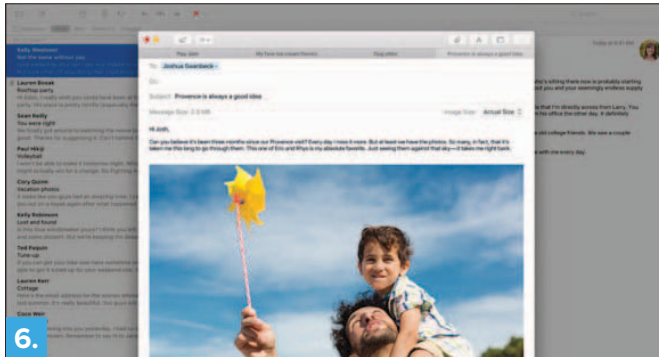
We use Spotlight constantly to search for files, open folders, and launch apps. In El Capitan, it can do a lot more. Do you need a jacket when you go out for lunch? Launch Spotlight and start typing Weather. If we've forgotten the name of a file we were working on yesterday, we can search for 'documents from yesterday' and it comes right up. From live sports scores and cinema listings, to looking up directions in Maps, Spotlight can do a lot more of the things Siri can do on your iPhone. Unfortunately, with no Siri on the Mac, we're still stuck typing for now.

## 5. Mail grabs new contacts and calendar events

Many people have switched from Outlook to Mail after purchasing an Apple Watch, because they love having Mail's VIP list feature notify them of the most important emails on both their phone and wrist. (We get a couple hundred emails on a slow day – a lot of it is garbage, and if we're not careful it can bury the things we actually want and need to see.) Mail in El



Capitan is even better, alerting us to contact details or event times in the body of our messages. It only takes a click to add new people to Contacts, or update an old contact's information, and adding new events to Calendar is easy, too.



## 6. Full-screen Mail and tabbed replies

When we're ploughing through all the emails we're sent in on our never-ending quest for a clean inbox, the new full-screen view in Mail is a real boon. As we're reading, we just press  $\text{⌘-R}$  on the messages we want to reply to (or  $\text{⌘-Shift-R}$  to reply-all). But then we can click anywhere outside that message to minimise it down to a tab bar along the bottom of the screen. We keep reading and queueing up those messages to reply to, and then take care of composing each reply, in a conveniently tabbed Compose window.

## 7. Mail's new gestures

New gestures make opening new Mail messages easier, too – just use two fingers on your trackpad, and swipe left to reveal a Delete button on the right, or swipe right to reveal a Mark as Unread button

on the left. You can change that Delete option to Archive in Mail > Preferences > Viewing.

## **8. Public transport directions**

Usually when we need Maps, we're out and about, using an iPhone. But not always. Now that Maps in El Capitan is more full-featured, offering public transport directions in select cities, it's possible to take our time plotting a course from the office. We then tap the Share button to send those directions to our iPhone for later. Google Maps has transit info for more cities, but if you happen to own an Apple Watch, Apple Maps is the only mapping app that will subtly tap you on the wrist before each turn.

## **9. Hide the menu bar**

If you like how full-screen apps make the menu bar go away, we've got great news: you don't ever have to see the menu bar unless you really need to use it. Go to System Preferences > General, and check the box for 'Automatically hide and show the menu bar'. It'll disappear giving you an extra sliver of space on your display, but reappear when you hover your cursor near the top. That same Preferences pane is where you'll find Dark Mode, a little feature that was new in OS X Yosemite.

## **10. Put a pin in your favourite tabs**

We keep a lot of tabs open all day to watch Macworld.co.uk's home page, work in our CMS, moderate the site's comments, and check the analytics. But the more tabs we open to do the rest of our job, the more crowded Safari's tab bar becomes. Pinned sites is great for cutting that clutter.

We can tap on a tab's name with two fingers (for a right-click) and select Pin Tab from the pop-up menu, and that tab will stay open – and stay updated – but with a much smaller 'footprint' in the tab bar. The pinned tabs appear on every new Safari window we open. You can't even accidentally close them by pressing ⌘-W – instead, just right-click one again for the options to close it or unpin it.

## 11. Mute the autoplay

A lot of websites have autoplay videos. It's an annoying trend that El Capitan can help with. When any tab is playing sound, you should see a little megaphone icon on that tab. Right-click it for an option to Mute Tab. We wish there was a setting in Safari's preferences to mute tabs by default without affecting the sound coming from other apps, so we could surf away without anything interrupting the music playing from iTunes or Rdio's standalone app. Maybe in an update, Apple?





## Photos for Mac

Concluding our series on Apple's photo-editing software

### **Create a Slideshow**

A handy new feature is the Projects tab that allows you to create print products, manufactured by Apple itself, as well as slideshows that you can export as HD movie files.

To create a new project, select the images you want to use via the Photos tab – you'll need to hold down ⌘ or Shift to select multiple images

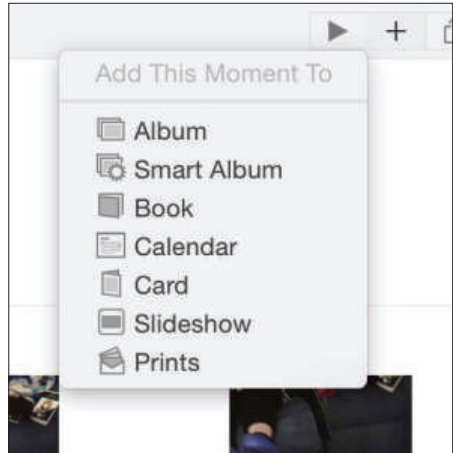
– then click the ‘+’ button at the top right of the Photos program window and select the type of project you want. Once created, any new project will subsequently be listed when you click the Projects tab.

A slideshow is perhaps the simplest kind of project because it doesn’t involve buying from Apple and the results are immediate.

The first choice upon choosing to put together a slideshow is to give it a name. Anything will do, although you should note that this text will appear within the opening frames. Instead of creating a new slideshow, you can choose via this dialog box to add the photos to a slideshow you’ve already created, selectable from the Slideshow drop-down list.

The layout of Photos’ slideshow construction window is straightforward – the photos are listed along the bottom, while dominating the screen is a preview of the slideshow. Clicking the Preview button will start it playing within the Photos window.

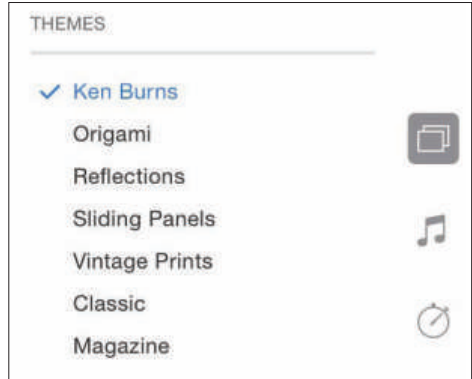
At the right of the program window are three icons that let you choose the Theme, Music, and Duration. When any of them are clicked a slide-out panel will appear showing options.



## Choose a slideshow theme

Six slideshow themes are available. These not only add interest to a slideshow via motion effects but

also let you make better use of photos that might be shot in portrait mode, or other aspect ratios – the individual frames of some slideshows involve multiple photographs better disposed to portrait shots, for example. The different themes are as follows:



**Ken Burns:** Each photo displayed is either slowly zoomed into or zoomed out of (a technique pioneered by documentary maker Ken Burns). You can set the start and end zoom points in each photo by selecting it within the thumbnails at the bottom of the program window, and clicking the square icon in the bottom left of the large preview. Selecting either the start or end icon will show a zoom slider.

**Origami:** Images in the slideshow seem to fold into view from the side of the screen.

**Reflections:** Pictures appear to be sitting on a shiny surface that reflects their contents.

**Sliding Panels:** Photos slide into and out of view – from the sides, top, bottom and out from the middle of the screen.

**Vintage Prints:** Images are shown as a series of virtual photographic prints, as if stacked on top of each other. A similar effect to that in the Ken

Burns slideshow is used to zoom slowly in and out in order to add interest although no control is offered over the zoom effect.

**Classic:** The traditional slideshow in which individual photos fill the screen, and crossfade into each other.

**Magazine:** Somewhat similar to the Origami and Sliding Panels except the transition between slideshow frames is quicker. There's also a more dynamic feel to match a supposed magazine layout.

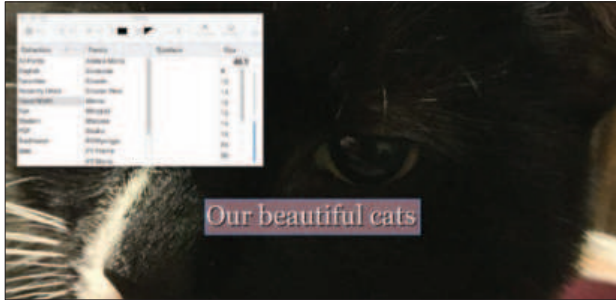
In most themes, the thumbnails at the bottom show how the photos will be arranged when two or more appear in a single slideshow frame, and clicking and dragging individual photos within the thumbnails will rearrange their order. Clicking and dragging photos within the large preview above will allow you to centre each individual picture within its frame in the slideshow.

**Pro tip:** The title of the slideshow can be edited by clicking it in the first frame of the large preview, and the font can also be changed by tapping ⌘-T to bring up the fonts palette. Unfortunately, although the palette includes controls for change the text colour and shadow, these don't appear to have any bearing on the text.

## Add text to a slideshow

In addition to the title text, which is added automatically based on what you type, you can also add individual captions to each image. This is done by clicking the '+' button at the right of the thumbnail





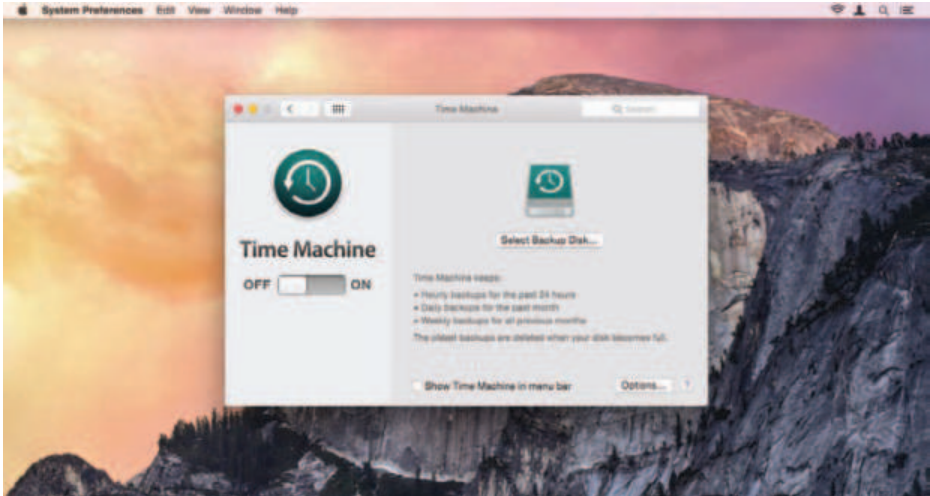
listing and typing into the text box. Unfortunately, the text box is fixed and can't be moved around.

## Change a slideshow's theme and duration

Each slideshow has a unique piece of music that plays while it runs, though you can choose your own song from your iTunes library by clicking the Music icon on the righthand side and expanding the Music Library heading. You can also select Theme Songs from the drop-down list to mix and match any of the seven theme songs with your slideshow. The Duration control works in concert with the music, because you can make the slideshow last as long as the music, or choose set times for each frame.

## Export a slideshow as a movie

As you progress creating your slideshow, it'll automatically be saved under the Projects tab. You can, however, also choose to export it as a QuickTime (MP4) movie file, playable on all Apple devices and most modern computers/handhelds. Three resolution options are available: Standard Definition (640x480), High Resolution 720p (1280x720), and High Resolution 1080p (1980x1080).



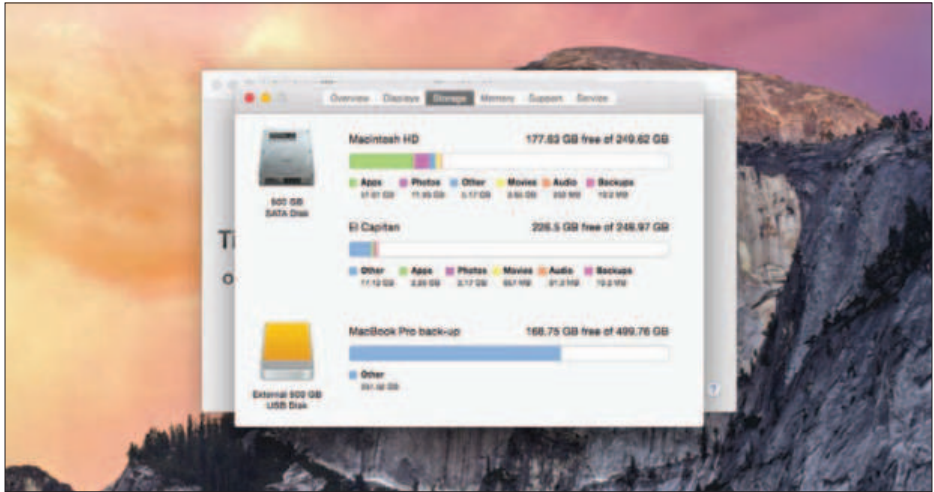
# System Preferences

The final part of our complete guide

## Use Time Machine to back up a Mac

Apple's Time Machine system is designed to safeguard your Mac's data by backing it up to an external disk. If you've not done anything with Time Machine to date, the System Preferences pane will be in its default state. To the left is a massive on/off switch (see above). On the right is a button that's used to select a backup disk, some information about what Time Machine does, a checkbox that determines whether it is shown in the menu bar, and an Options button.

Turn Time Machine on and it will list suitable disks for use. Generally speaking, the location you're copying to should have more free space than the capacity of the disk you're intending to back up. If



you're unsure what size disk your Mac has, go to the Apple menu, select About This Mac, and click Storage. An overview will be provided that outlines the size of your disk (and those connected).

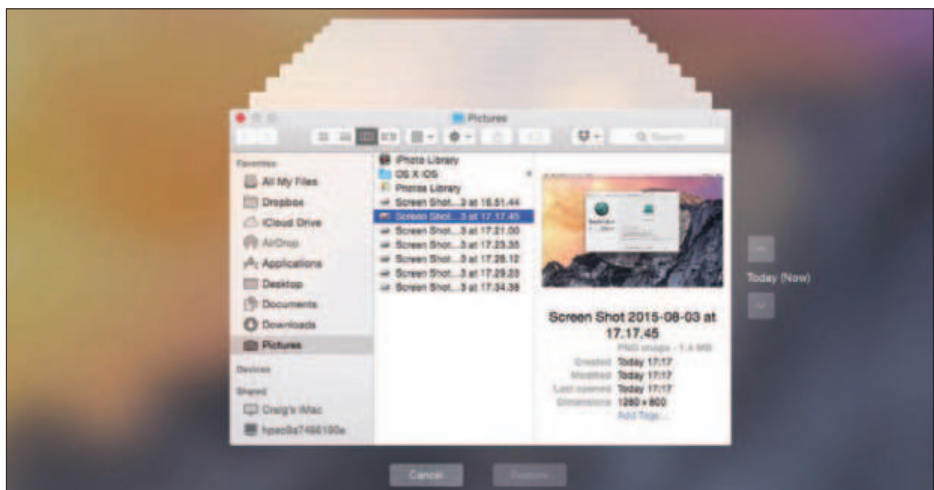
Bear in mind that if the disk is partitioned and you only intend to back up the one partition, the external drive only has to be larger than that rather than the entire disk. (So in the above example, the Mac's 500GB disk has been split in two. Therefore, the external drive needs to be larger than 250GB, not 500GB – although the more space you have, the more versions of documents and data Time Machine can store.)

On selecting a disk, you can choose whether to encrypt your backups via the checkbox; clicking Use Disk then gets everything started. Back in the main Time Machine window, you'll see a countdown to the next backup, and details of the oldest and latest backups (which will start out as 'None'). When a backup is taking place, you'll see how much

data is being backed up, how much is left to go, and approximately how long this will take. Your first backup will probably take quite a long time, but subsequent ones should be faster, since less data will be copied.

Using Select Disk, you can update the disk used for backups or even use multiple disks. With the Options button, you can exclude items from your backup. Click the '+' button and select a document or folder. Its size will be listed, showing the impact on the entire backup. Generally, there's not much point in omitting anything from backups, because that data will not be available if you later need to restore. The Options sheet also includes a checkbox, so you can choose whether you are notified when old backups are deleted; on notebooks, there will also be a setting for whether Time Machine should backup while on battery power.

The final setting is the checkbox for showing Time Machine in the menu bar. The menu extra details



the current backup, if one is active. In fact, the icon provides an at-a-glance view, once you know what to look for. When idle, it will be a block with a circular arrow around it, but when a backup is in progress, a second arrow is added; if an error occurs, the clock will become an alert icon.

The menu also enables you to skip the current backup and to enter Time Machine. The latter won't be much use immediately, but access it once you've been running Time Machine for a while and you'll be able to access previous versions of Finder windows (see image on page 19), select old versions of documents and then restore them. Should a bigger disaster befall your Mac, you can restore your entire Mac from a Time Machine backup. Hold ⌘-R during a restart, select Restore from Time Machine Backup, and click Continue. Select your backup disk and click Continue, and then the most recent backup, before clicking Continue again. The Mac will restore (which may take a while) and restart. The subsequent Time Machine backup may then be a full one.

## Accessibility

Many OS X users never venture into the Accessibility pane in System Preferences, but although it's primarily designed to assist people with specific vision, hearing and motor requirements, plenty of the available options can be beneficial to a far wider range of users.

The pane is split in two. From the sidebar on the left, you choose the section you wish to access. Sections are grouped into four distinct categories, to make finding everything simpler: Vision, Media, Hearing and Interacting. On clicking one of the

sections, its options appear in the righthand side of the pane.

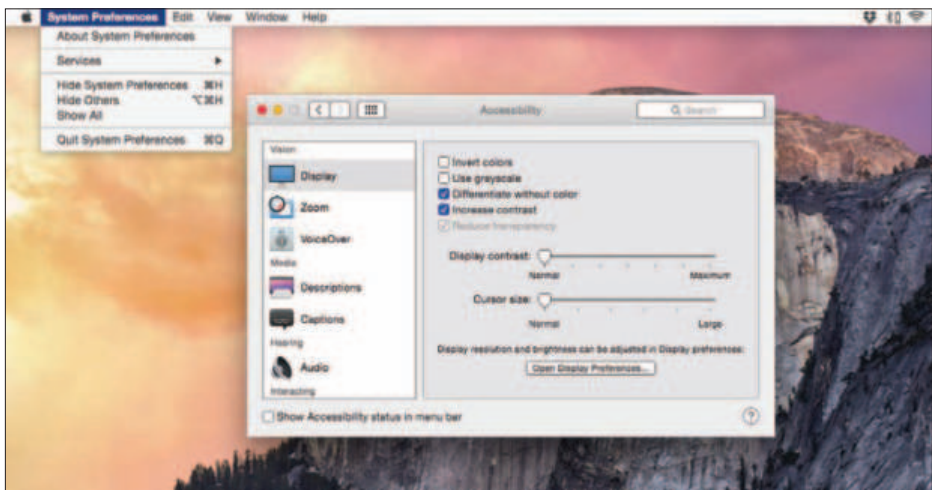
## Vision

The three sections within Vision are Display, Zoom and VoiceOver.

**Display** has five checkboxes:

- Invert colours (reverses all screen colours)
- Use grayscale (uses only grey shades for everything onscreen)
- Differentiate without colour (adds shapes alongside – or instead of – colour, in order to convey status)
- Increase contrast
- Reduce transparency.

The final two options will be of particular interest if you've had problems using OS X after Yosemite's visual refresh. They're both designed to bring

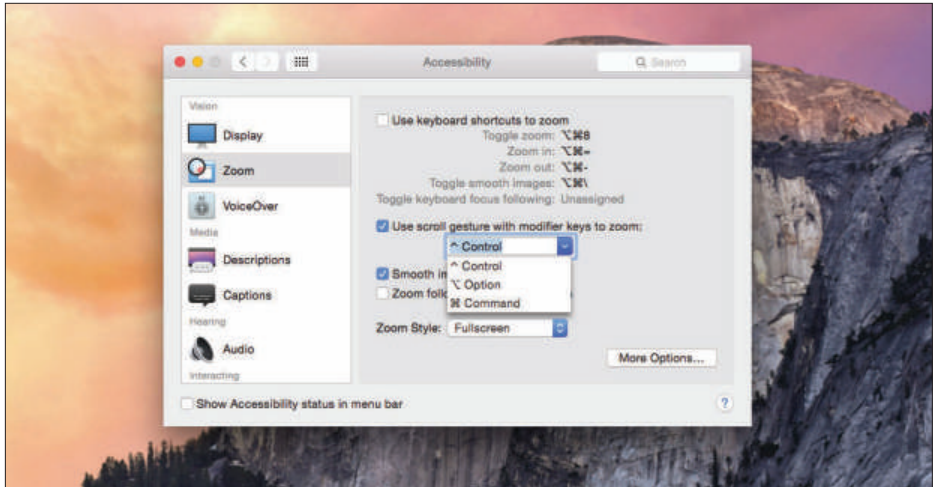


extra clarity to what you see onscreen – ‘Increase contrast’ darkens some colours, makes window controls more distinct, and removes transparency from window sidebars, toolbars and menus. If that effect is fierce for you, instead just check ‘Reduce transparency’. Colours then remain unaffected, but system transparency effects will all disappear, resulting in solid menus and toolbars. This means in the likes of Maps, the actual maps won’t affect the colour of the toolbar as you scroll the page.

Two sliders are found below the checkboxes: Display contrast and Increase contrast. Display contrast changes the contrast of all onscreen elements, in a manner similar to on a television or in a graphics package. Even a slight adjustment has a big effect; at maximum levels, OS X becomes essentially unusable. Cursor size is more useful, increasing the size of the pointer. Normal is the standard setting, while Large is even bigger than a standard Dock icon. This slider is worth investigating if El Capitan’s ‘cursor wiggle’ isn’t enough for you to easily keep track of where the cursor is at any given time.

**Zoom** is a tool for zooming in and out of the display. With ‘Use keyboard shortcuts to zoom’ turned on, the listed shortcuts can be used to toggle zoom, zoom in, zoom out, and toggle smooth images. ‘Use scroll gesture’ has you work with a user-defined modifier key and mouse/trackpad gestures (for example, Control and a two-finger vertical swipe) to zoom. ‘Smooth images’ smooths visuals when zooming. ‘Zoom follows the keyboard focus’ ensures the zoom follows whatever you’re doing with the keyboard. By way of example, turn





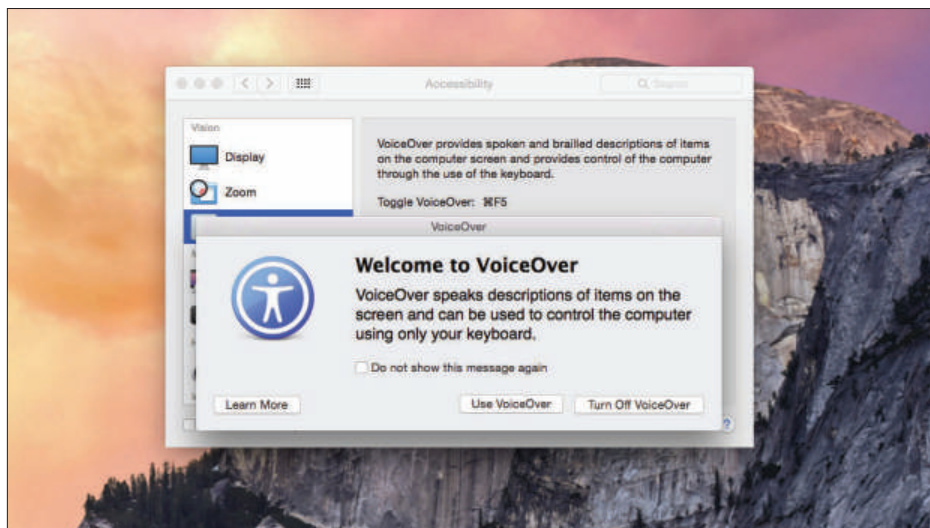
this on and if you press  $\text{⌘}$ -Tab, visual focus would move to the task switcher; but if this option was turned off and you happened to be zoomed into the top left of the screen before pressing  $\text{⌘}$ -Tab, you might not even see the switcher.

If you decide to use zooming, you should explore ‘Zoom Style’, which provides the choice between the entire screen zooming in and out (‘Fullscreen’), or just zooming a section within a window that follows the pointer rather like a floating magnifying glass.

The ‘More Options’ button opens a sheet with settings for the chosen zoom style. When using ‘Fullscreen’, you get sliders for maximum and minimum zoom levels. ‘Show preview rectangle when zoomed out’ places a black border on the screen, showing the portion you’ll zoom into. The radio button group lets you choose how and when the zoomed-in screen image will move: with the cursor, only when it reaches the edge of the zoomed area, or so it remains near the screen centre.

With ‘Picture-in-picture’, you get a magnification slider, options for the window’s position – stationary, following the cursor, or tiled along the edge. The last of those splits the screen vertically. On the left, you get the magnified view, and the standard view remains on the right. Each scrolls independently. If you have a vestibular condition, be aware that this can be a motion/vertigo trigger (as, indeed, can some other aspects of zooming). ‘Cursor style’ provides the means to switch the standard pointer for a crosshair. The other options are for inverting the colours (specifically within the zoomed area), enabling zoom temporarily by holding the Control and Alt keys, and speaking items under the mouse after a delay. With ‘Adjust Size and Location’, the area the tiled view takes up can be fine-tuned.

**VoiceOver** provides spoken descriptions of items on the screen. Turn on VoiceOver using ⌘+F5. A



prompt will then provide the means to learn more (press Space) or skip the intro (V). ‘Use VoiceOver’ and ‘Turn Off VoiceOver’ buttons act as ‘continue’ and ‘cancel’, respectively, for the feature.

## Media

In the Media category are two sections: Descriptions and Captions.

With **Descriptions**, you get a single checkbox, which plays video descriptions when they’re available. In **Captions**, you define settings for closed captions and subtitles. Three styles exist initially: Default, Classic, and Large Text. You can create your own using the ‘+’ button, whereupon you choose a name, background colour and opacity, text colour, font, and text size. In all cases, you can determine whether the video can override your choices when necessary. The checkbox at the bottom of the window when ticked will ensure closed captions/SDH are used rather than standard subtitles, when available.

## Hearing

This category has just one section: Audio. This has two settings. The first adds a screen flash when an alert sound occurs, and this can be tested by clicking the ‘Test Screen Flash’ button. This has broader uses than just assisting people who are hard of hearing – if you’re Mac’s muted at night, it can be a great way of attracting your attention when an alert occurs. ‘Play stereo audio as mono’ adjusts all audio output to mono. This is particularly useful for users with poor hearing in only one ear when they’re listening through headphones.

## Interaction

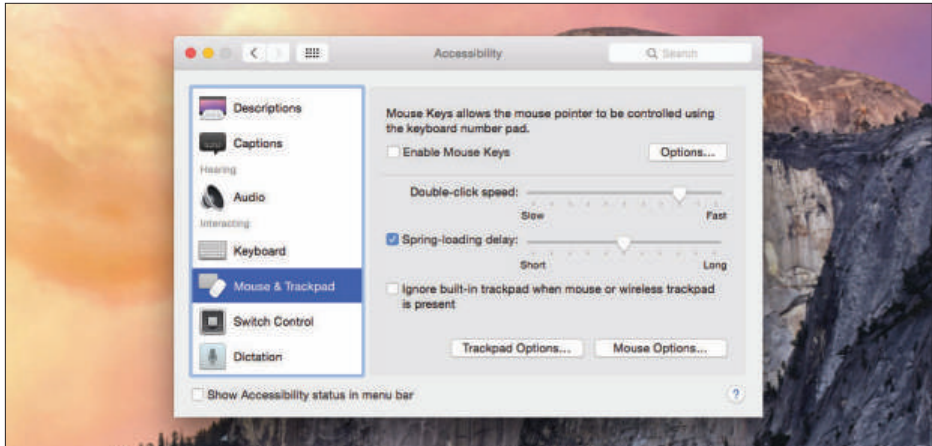
The Interaction category has four sections: Keyboard, Mouse and Trackpad, Switch Control and Dictation.

The **Keyboard** section is about helping anyone who may have difficulties typing and using keys. When ‘Enable Sticky Keys’ is on, modifiers (Shift-Control-⌘-Alt) remain active, and their icons are displayed at the top-right of the screen. A sound also plays to denote the activation of one of these keys. Press the same modifier a second time and it’s highlighted. Press a third time and it’s cancelled. Modifiers also disappear when a keyboard shortcut is activated. (For example, pressing Shift-S triggers Save, thereby turning off the modifier.)

The ‘Options...’ button provides further settings. You can toggle Sticky Keys by pressing Shift five times, turn off the audio alert, and change the screen corner in which the key icons appear.

‘Enable Slow Keys’ is all about adjusting the amount of time between when a key is pressed and when it’s activated. Click ‘Options...’ and you can toggle key sounds and adjust the acceptance delay. Having sounds on with Slow Keys is a good idea if you use an especially long delay, because it provides extra confirmation regarding key presses. This may not be necessary when typing, but it’s useful when using keyboard shortcuts.

**Mouse and Trackpad** starts off with ‘Enable Mouse Keys’. When active, you can use an extended keyboard’s number pad to control the cursor. On keyboards lacking a number pad, you use ‘I’ for the mouse button and the keys around it – 7, 8, 9; U, O; J, K, L – for directions. However, standard



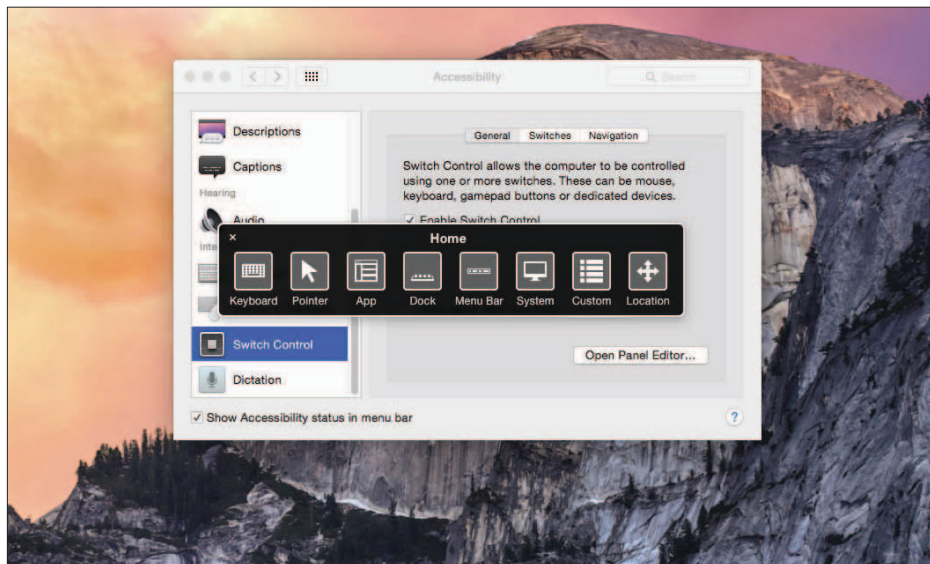
key usage is disabled while Mouse Keys is active, so we recommend getting an extended keyboard when using this feature. Click 'Options...' and you can choose to press Alt five times to toggle Mouse Keys, ignore the built-in trackpad when Mouse Keys is active, and define the delay and maximum speed. Those last two options need careful tuning to individual users. If the delay and speed is too slow, it will be frustrating to navigate using Mouse Keys; too fast, though, and the user may often miss their targets.

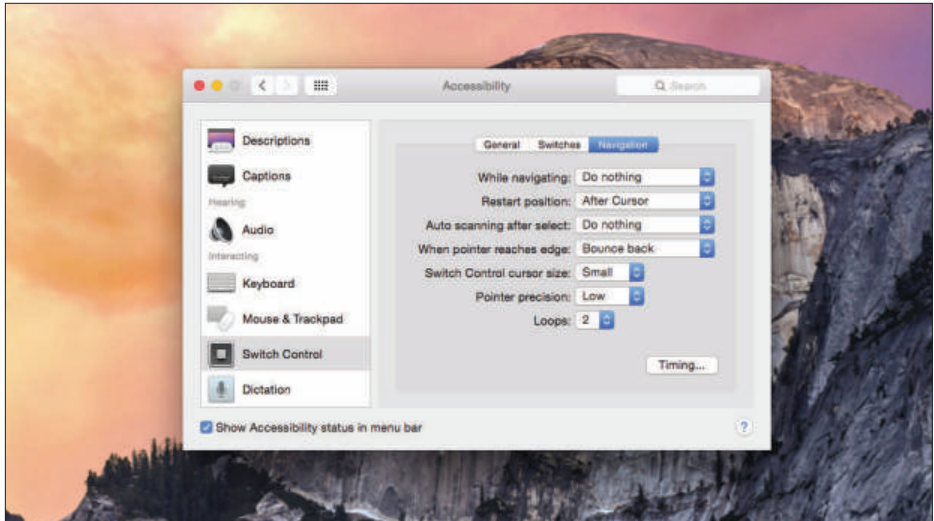
The rest of the pane is concerned with adjusting the behaviour of your mouse or trackpad. With 'Double-click speed', you can reduce the speed required for that action, thereby making it accessible to anyone who cannot click a button twice in succession fast enough. Similarly, the spring-loading delay (for example, when dragging a document over a folder) can be adjusted. The final checkbox is a setting for ignoring the built-in trackpad when a mouse or wireless trackpad is present.

At the foot of the pane, there are two buttons, providing quick access to, respectively, trackpad and mouse options. For trackpads, you can adjust the scrolling speed, set scrolling to be with or without inertia, and enable dragging ‘without drag lock’, ‘with drag lock’ and as a ‘three-finger drag’. For mice, you just get to change the scrolling speed.

**Switch Control** is in essence all about performing actions simply by clicking a switch. Switches can be all kinds of devices; examples include a keyboard key, a mouse button, a joystick, or a specialised adaptive device.

The Switch Control options are divided into three tabs (see below). ‘General’ turns on Switch Control, which launches the Home row window. You press a switch (such as Space on your keyboard) to cycle through (‘scan’, in Apple’s terminology) the options and then a second time to make a selection.





Depending on the selected option, subsequent selections will also be made by pressing the switch. (For example, select Menu Bar, and the selection will flick back and forth between the menu bar menus and menu extras; select the former and the system will scan through the menu titles and then, after another selection is made, items within that menu.) Other options within General include the means to hide the panel after a period of inactivity, and to access the Panel Editor, designed to program a new switch or device into the system.

In the 'Switches' tab, you can define and assign switch inputs using the '+', '-', and cog keys, and adjust the timing of switch usage. Under 'Navigation', there are further settings for changing how scanning operates. Another timing button is included here, but for navigation elements. Here, you can determine how rapidly scanning moves, and how long (if at all) the system pauses on the first item.



**Dictation** works in tandem with Dictation and Speech, which we looked at last month. The single button, 'Dictation Commands...', opens a sheet that lists commands, categorised into Selection, Navigation, Editing, Formatting and System. Items can be enabled or disabled using the checkboxes, and selecting one displays accepted speech input in order to trigger the relevant command.

At the bottom of the sheet is a checkbox labelled 'Enable advanced commands'. This adds new sections to the list: Application, Document and User. The last of those is designed for you to add custom commands. To do so, click the '+' button, and then input a term, select the app the command should work in (or use 'Any Application'), and then choose an action from a predefined list: Open File; Open App; Run Workflow; Paste Text; Paste Data; Keyboard Shortcut. Select a custom command and click '-' to delete it. Commands included by default cannot be removed.

As a final note regarding Accessibility in OS X, some settings you're likely to want to have quick access to are available by way of an overlay window. Press Alt-⌘-F5 and you'll see 'Accessibility Options', and the rest of the screen will dim. The window provides access to: toggling how zoom is controlled (by keyboard shortcuts or scroll gestures); enabling VoiceOver; enabling Sticky Keys, Slow Keys and Mouse Keys from the Mouse and Keyboard settings; and Display's 'Invert display colours' checkbox and 'Adjust contrast' slider. Buttons provide access to the Keyboard System Preferences pane ('Keyboard Shortcuts...') and Accessibility ('Preferences...'), while Done (or tapping Escape) closes the window.



# History of Apple

We continue our look back at the story of Apple

## Apple II

The Apple II (pictured) debuted at the West Coast Computer Faire of April 1977, going head to head with big-name rivals such as the Commodore PET. It was a truly groundbreaking machine, just like its predecessor, with colour graphics and tape-based storage (later upgraded to 5.25in floppies). Memory ran to 64K in the top-end models and the image it sent to the NTSC display stretched to a truly impressive 280x192, which was then considered high resolution. Naturally there was a payoff, and pushing it to such limits meant you had to content yourself with just six colours, but dropping to a more reasonable 40 rows by 48 columns would let you enjoy as many as 16 tones at a time.

Yes, the Apple II (or ‘apple II’ as it was styled) was a true innovation, and one that Jobs’ biographer, Walter Isaacson credits with launching the personal computer industry.

The trouble is, specs alone are rarely enough to justify a \$1,300 spending spree. Business users needed a reason to dip into their IT budgets and it wasn’t until some months later that the perfect excuse presented itself: the world’s first ‘killer app’.

## **The first app on an Apple computer: Visicalc**

Dan Bricklin was a student at Harvard Business School when he visualised “a heads-up display, like in a fighter plane, where I could see the virtual image [of a table of numbers] hanging in the air in front of me. I could just move my mouse/keyboard calculator around on the table, punch in a few numbers, circle them to get a sum, do some calculations...”

Of course, we’d recognise that as a spreadsheet today, but back in the late 1970s, such things only existed on paper. Converting them for digital use would be no small feat, but Bricklin was unperturbed. He borrowed an Apple II from his eventual publisher and set to work, knocking out an alpha edition over the course of a weekend.

Many of the concepts he used are still familiar today – in particular, letters above each column and numbers by the rows to use as references when building formulae.

The technological limitations inherent in the hardware meant that it didn’t quite work as Bricklin had first imagined. The Apple II didn’t have a heads-up display and although the mouse had

A	B	C	D
ITEM	NO.	UNIT	COST
MUCK RAKE	43	12.95	556.85
BUZZ CUT	15	6.75	101.25
TONER	250	49.95	12487.50
EYE SNUFF	2	4.95	9.90
SUBTOTAL			13155.50
9.75% TAX			1282.66
TOTAL			14438.16

been invented, it wasn't bundled with the machine. So, the heads-up display became the regular screen, and the mouse was swapped out for the Apple II's game paddle, which Bricklin described as being "a dial you could turn to move game objects back and forth... you could move the cursor left or right, and then push the 'fire' button, and then turning the paddle would move the cursor up and down."

It was far from perfect and working this way was sluggish, so Bricklin reverted to using the left and right arrow keys, with the space bar in place of the fire button for switching between horizontal and vertical movement.

VisiCalc (pictured) was unveiled in 1979 and described as a "magic sheet of paper that can perform calculations and recalculations". We owe it a debt of gratitude for the part it played in driving sales of the Apple II and anchoring Apple within the industry.

Writing in Morgan Stanley's 'Electronics Letter', shortly before its launch, analyst Benjamin M Rosen

expounded his belief that VisiCalc was “so powerful, convenient, universal, simple to use and reasonably priced that it could well become one of the largest-selling personal computer programs ever... [it] could some day become the software tail that wags (and sells) the personal computer dog.”

How right he was, as Tim Barry revealed in a later InfoWorld piece in which he described an experience that would have been familiar to many:

“When I first used VisiCalc on an Apple II, I wanted to get a version that could take advantage of the larger system capabilities of my CP/M computer. Alas it was not to be... We ended up buying an Apple II just to run VisiCalc (a fairly common reason for many Apple sales, I’m told).”

Apple itself credited the app with being behind a fifth of all series IIs it sold.

## **Apple II success: colour graphics**

So a piece of software worth a little more than \$100 was selling a piece of hardware worth ten times as much. That was uncharted territory, but even with the right software, the Apple II wouldn’t have been a success if it hadn’t adhered to the company’s high standards. The February 1984 edition of *PC Mag*, looking back at the Apple II in the context of what it had taught IBM, put some of its success down to the fact that its “packaging did not make it look like a ham radio operator’s hobby. A low heat-generating switching power supply allowed the computer to be placed in a lightweight plastic case. Its sophisticated packaging differentiated it from... computers that had visible boards and wires connecting various components to the motherboard.”

More radically, though, the Apple II 'was the first of its type to provide usable colo[u]r graphics... contained expansion slots for which other hardware manufacturers could design devices that could be installed into the computer to perform functions that Apple has never even considered.'



In short, Apple had designed a computer that embodied what we came to expect of desktop machines through the 1980s, 1990s and the first few years of this century – before Apple turned things on its head again and moved increasingly towards sealed boxes without the option for internal expansion.

Almost six million series IIs were produced over 16 years, giving Apple its second big hit. Really, though, the company was still getting started, and its brightest days were still ahead.

For VisiCalc, the future wasn't so bright, largely because its developers weren't quick enough to address the exploding PC market. Rival Lotus stepped in and its 1-2-3 quickly became the business standard. It bought Software Arts, VisiCalc's developer, in 1985 and remained top dog until Microsoft did to it what Lotus had done to VisiCalc – it usurped it with a rival that established a new digital order.

That rival was Excel which, like VisiCalc, appeared on an Apple machine long before it was ported to the PC.

## Apple, Xerox and the one-button mouse

Apple has never been slow to innovate – except, perhaps, where product names are concerned. We're approaching the 1980s in our trip through the company's history and we're at the point where it's followed up the Apple I and II with the III.

The two Steves founded the company with a trend-bucking debut and had the gumption to target the industry's biggest names with its two follow ups. That must have left industry watchers wondering where it might go next.

The answer, it turned out, was Palo Alto. Xerox had established a research centre there – Xerox PARC, now simply called 'parc' – where it was free to explore new technologies a long way from the corporate base on the opposite side of the country. It's work helped drive forward the tech that we still use every day, such as optical media, ethernet and laser printers. Of most interest to Mac users, though, is its revolutionary work on interface design.

The Apple I, II and III computers were text-based machines, much like the earliest IBM PCs. But Jobs, who was working on the Lisa at the time, wanted something more intuitive. He convinced Xerox to grant three days' access to PARC for him and a number of Apple employees. In exchange, Xerox won the right to buy 100,000 Apple shares at \$10 each.





To say this was a bargain would be a massive understatement. Apple has split its stock four times since then – in 1987, 2000, 2005 and 2014. Companies do this when the price of a single share starts to get too high, in an effort to stimulate further trading. So, assuming Xerox held on to those shares, it would have had 200,000 by 1987, 400,000 by 2000 and 800,000 by 2005. The split in 2014 was rated at seven to one, so Xerox's holding would leap from 800,000 to 5.6m. Selling them at today's prices would rake in \$708m (£450m). Not bad for a three-day tour.

Jobs was bowled over by the Xerox Alto (pictured opposite), a machine used throughout the park, with a portrait display and graphical interface, which was way ahead of its time. It had been knocking around for a while by then, but Xerox, which built 2,000 units, hadn't been selling it to the public. It wasn't small – about the size of an under-counter fridge – but it was still considered a 'personal' machine, which was driven home by the user-centric manner in which it was used. It was the first computer to major on mouse use, with a three-button gadget used to point at and click on objects on the screen.

Jobs decreed that every computer Apple produced from that point on should adopt a similar way of working. Speaking to Walter Isaacson some years later, he described the revelation as "like a veil being lifted from my eyes. I could see what the future of computing was destined to be."

**Next month:** We'll continue our history of Apple with the debuts of the Lisa and the Macintosh, as well as the famous 1984 ad.



## Review: iPhone 6s

Everything you need to know about Apple's new phone

**T**he iPhone 6s is finally here. Apple promised it would be faster than its predecessor, while boasting a feature that the tech giant compares to the introduction of multi-touch (the technology responsible for the touchscreen mobile boom) – 3D Touch. But has Apple succeeded in creating a new type of interaction that we'll be seeing on other smartphones in coming years? Or has it fallen flat on its face? Find out in our review.

## Price

Like its predecessor, the 6s is available starting at £539 for the 16GB model. The 64GB option is available for £619, while the 128GB phone is £699. We're pleased to see that Apple hasn't upped the price despite the introduction of 3D Touch.

## Design

As expected, the design is in essence the same as the iPhone 6, though there have been a few slight changes, as well as a new colour option. It has a curved 4.7in display and is made with a sleek, rounded aluminium casing just like its predecessor.

The main difference is that the 6s is made with a more durable Series 7000 aluminium, which the tech giant also uses for the Apple Watch. This is in order to prevent a repeat of 2014's Bendgate debacle. We're hoping this also translates into a sturdier iPhone as our 6 Plus would dent from relatively small drops, though we've yet to (willingly) drop our 6s to put this to the test.

What's more, the 6s is also available in a new Rose Gold colour option, adding to the Gold, Silver and Slate Grey we've seen previously. Photos don't do the rose gold iPhone any justice, as it looks 10 times better in the flesh.

As expected, the iPhone 6s and 6s Plus are slightly thicker than their predecessors, but by such a teeny tiny amount (two tenths of a millimetre to be exact) you'll never realise. Although with this said, we have noticed that the 6s is marginally heavier than the 6 – but with the added protection of Series 7000 aluminium and the introduction of 3D Touch technology, we think it's a worthy trade-off.

## Display

We're a bit disappointed to see that Apple hasn't increased the resolution of the iPhone 6s' screen. It's the same Retina display as that found on its predecessor, though it has the 3D Touch technology beneath it to introduce a huge range of new possibilities that we're excited about.

The 6s has a 1334x750 resolution display, with a pixel density of 326ppi. And while we've found that the screen on the iPhone 6 is perfectly satisfactory, there's no doubt that Quad HD displays from the likes of Samsung and LG take things to a whole new level that Apple hasn't reached. This won't bother iPhone 6 users, but it's a noticeable difference for those switching from the 6 Plus, with its full HD display to the 6s.

## 3D Touch

3D Touch is a mixture of display technology, hardware and software, but it's one of the most exciting new features of the new iPhone 6s, so we're dedicating a whole section of this review to it.

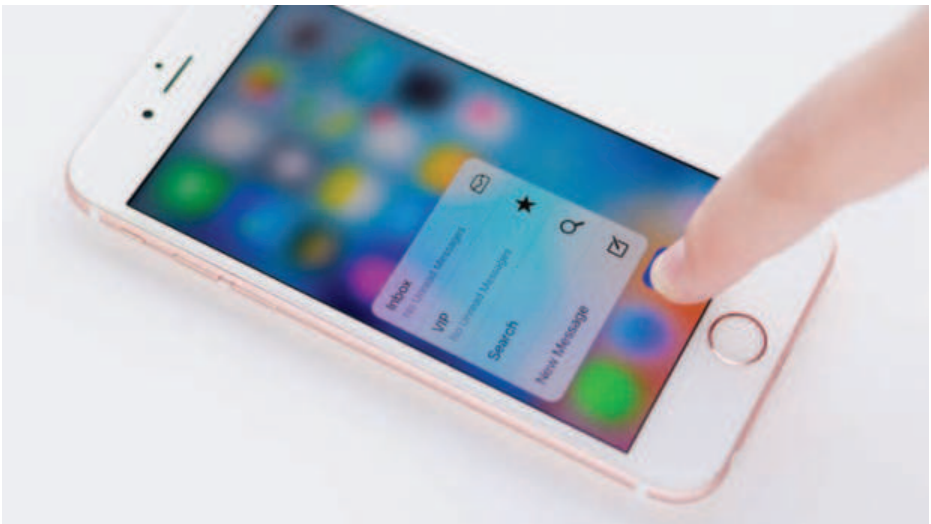
It works a lot like Force Touch on the Apple Watch and the new MacBook Trackpad, detecting force to enable new ways to interact with the smartphone. In addition to tapping, you can 'Peek' and 'Pop' by pressing lightly or pressing harder. You're able to interact with apps made by Apple, as well as those made by third-party developers in new ways thanks to the technology.

On the home screen, you're able to press on icons to go straight to a particular part of that application. For example, pressing the Instagram icon will bring up options to post a photo or video,

view your activity, access your direct messages or initiate a search, and the Camera icon will present options that let you take a selfie or start shooting a video. But what about apps that don't offer any kind of shortcuts? It'll blur everything around the icon, vibrate quickly, then revert back to its original state to show you that it recognised the press, but nothing else is going to happen.

It's difficult to understand how great this new feature is until you've tried it yourself, as it's all about how it feels to use, though we can try our best to explain it because things get interesting when you're using it from within an app. It can be a bit fiddly, but we think we'll get used to it in time.

For one, you can use it to preview a message in Mail. From your inbox, simply force press on an email to 'peek' into it and get a preview of the content. It's a much easier way of browsing your inbox, but it'll take some getting used to – we've found ourselves



lifting our thumb when peeking into an email to see what is written beneath our thumb, which minimises the preview.

Although as our US colleague Susie noted in her hands-on review of the iPhone 6s, it's not really used for reading, which is why Apple calls it 'peek'. It's meant for small interactions that'll make your life a little easier. From the Peek preview in Mail, you can swipe right to mark the email as read/unread, swipe left to archive it or swipe up to unveil additional options including Reply All, Forward, Mark, Notify Me and Move Message.

The good news is that when you swipe up to unveil additional options, the preview window becomes fixed in place, allowing you to take your finger off the screen to select the option you want. It'd be pretty awkward to do otherwise!

If you want to go right into the email, you'll want to press that bit harder to 'Pop' into the message and reply or read more.

In Messages, you can use 3D Touch to achieve lots of different tasks. Hard press on a name to call them, FaceTime them, add them to contacts and more. If you press on URLs you can peek at them to see a preview of what they'd look like in Safari, or press harder to pop into the app itself. Street addresses can be previewed in Maps, dates can be added to the Calendar and more. In essence, it should make everything much quicker and prevent you from needing to switch apps regularly.

And thanks to Apple's much more open approach that began with iOS 8, third-party developers will be able to use the technology in the apps and games. Instagram was one of the first to implement 3D

Touch compatibility, enabling users of the popular social network to ‘peek’ at other profiles from their feed, as well as ‘peeking’ at pictures and videos when browsing a particular profile. It’s a better way of interacting and is taste at what is to come with the future of 3D Touch in third-party apps. We’re definitely excited for the potential this new technology holds.

Another exciting example of third-party developers using 3D Touch is in AG Drive, a futuristic racing game available on the App Store. When racing, you can use a varying level of force to dictate your level of acceleration, and pushing hard will activate a speed boost. This is compared to having a single option for acceleration and needing to move your finger to hit the boost button on other devices, which after using the 6s for a few days seems like an awkward way of gaming. It’s amazing what a few days with 3D Touch can do.



## Hardware

Inside the iPhone 6s is a new A9 processor that's paired with an M9 motion co-processor to improve efficiency. Traditionally iPhones have had a modest 1GB of RAM, but Apple has decided to upgrade the 6s to 2GB.

The tech giant says that the iPhone 6s' processor is 70 per cent faster and has 90 percent better graphics performance. The phone scored 2511 in single-core and 4404 in multi-core mode in Geekbench, putting it just behind the processing power of the Galaxy S6, which scored 4438 points. It beat the HTC One M9 by a whopping 626 points, scoring 3778 points, which would normally be an acceptable score.

However, it's in the graphics department that the 6s really flexes its muscles. We ran two GFXBench tests – T-Rex and Manhattan, the same tests that our colleagues at PC Advisor use when testing Android devices, and compared the results. Samsung's Galaxy S6 managed a respectable 30fps in T-Rex and 14fps in Manhattan, while the iPhone 6s scored a whopping 59fps in T-Rex and 56fps in Manhattan.

Rumours about the 6s suggested that Apple would drop the 16GB model in favour of a 32GB, 64GB and 128GB line-up, and we were keeping our fingers crossed that it was true, as we really don't think that 16GB is enough space for most iPhone users – especially with Live Photos and 4K video shooting. Annoyingly, though, Apple has stuck with the same 16-, 64- and 128GB models.

There are iCloud options available to help store Photos, Music and more in the cloud, though you'll get only 5GB of iCloud space for free, so you'll find



that you're paying for the privilege. We'd strongly recommend opting for the 64GB model if your budget can stretch to £619.

Apple has improved the Touch ID fingerprint sensor beneath the Home button too, which is speedier and more reliable. Indeed, we found it to be a little too fast in our tests.

We've got into the habit of using the home button to wake up the display of our iPhones to check the time on the lock screen, as the power button is awkward to reach when using a 6(s)/6(s) Plus. However thanks to the updated Touch ID, your phone is unlocked almost instantly after pressing the button, which isn't what we want to happen when we only want to check the time. It's a true 'first world problem' to have, and we're really not complaining, but it requires a bit of a workaround (using fingernails, swiping when clicking) to avoid.



The iPhone 6s still uses the Lightning port rather than the rumoured USB-C, though we suspect that this might be the last iPhone model to do so as USB-C becomes the standard port across all mobile technology and laptops.

## Camera

Apple has made some improvements to the iPhone's camera, introducing a 12Mp camera to the rear and a 5Mp camera to the front. That's a significant improvement over the 1.2Mp camera on the front of the iPhone 6, and the 8Mp camera on the rear. Panoramas are now up to 63Mp, too.

The camera is impressive, and rather than focusing on packing in loads of new pixels, Apple has instead focused on improving the technology behind it to produce top-quality images. We're amazed at just how good the quality is, and especially how good it is at white balancing – even when compared to its predecessor, the iPhone 6.

Interestingly, the company has also turned the display into a true-tone flash for the front camera, and we think we should see a huge improvement when it comes to selfies. Then there's video, which has been improved to a fantastic 4K while the front-facing camera can record up to 1080p HD.

A software-based camera feature that we really like is called Live Photos – it's exclusive to the iPhone 6s and 6s Plus. Live Photos is turned on by default in the Camera app, and if you leave it on, it'll automatically capture 1.5 seconds before and after the moment you press the shutter button. In essence, it's a really short video or an animated Gif, but it actually uses 12Mp photos captured by

the iSight camera. You can share them with friends, and if they're running iOS 9 or El Capitan they'll see the animation, too.

When you're flipping through your photos in the Camera Roll on the 6s, you'll see a little glimpse of the animation to signal the fact it is indeed a Live Photo and not a still. If you want to watch it, press harder using 3D Touch and you'll see the full three seconds, complete with an audio snapshot. It's a great idea, and really plays on nostalgia. Imagine being able to look back at a moving snapshot of yourself/your friends – it'll be a much happier experience than a looking back on a photo alone, and no extra effort is required on your behalf.



Apple is opening Live Photos up to developers, too, so apps such as Facebook will be able to support the feature, and we imagine that the likes of Twitter and Instagram will introduce it, too. Our only concern is the space they'll take up.

We've been out to put the 6s camera to the test. The following images have been in no way edited or compressed, we took them straight from the iPhone.

## Software

The iPhone 6s ships with iOS 9, which introduces lots of new features for all iPhone owners, but thanks to the 3D Touch display there will be lots of additional features for users of the new iPhone based on the new Peek and Pop interactions.

For more on Apple's latest iOS, go to page 83.

## Macworld's buying advice

We're really impressed by the offerings of the iPhone 6s, especially the 3D Touch technology. If it catches on (and we think it will), it will completely change how people interact with their iPhones, both in terms of browsing the web and social media,





as well as when gaming. The camera overhaul is definitely a welcome addition, especially when you consider Apple hasn't upped the resolution of its iSight camera since the iPhone 4s back in 2011. This works well with Live Photos.

It doesn't just boast impressive new features, the boosted internals provide a much faster iPhone than we're used to, and tasks that would take seconds on our 6 Plus took a split second on the 6s.





## Review: iPhone 6s Plus

The complete guide to Apple's king-size handset

**T**he iPhone 6s Plus is Apple's newest top-of-the-line phablet: a big, 5.5in smartphone with a super-fast processor and a new pressure-sensitive screen. Here are our early impressions of the latest Apple phablet.

### Design

As is traditional with 'S'-class updates, the iPhone 6s Plus has essentially the same physical design as its predecessor. Indeed, look at a 6 Plus and 6s Plus side by side and you'd struggle to tell them apart.

The 6s Plus is fractionally wider and thicker, and a little heavier too; these changes are to accommodate the components needed to power the new 3D Touch screen. But you're extremely

unlikely to notice the extra volume, or to care much about the extra 20g. (The new screen tech more than justifies the compromises required to include it, as we will see in due course.)

The iPhone 6s Plus remains a slender and lightweight device, given the generous proportions of its 5.5in screen, and one that feels comfortable in the hand. That doesn't mean its dimensions are right for everyone, however: if you have small or even medium-sized hands, you'll probably find that you can't reach the entire screen with a single thumb the way you could on a 4- or even 4.7in screen. You can treat the 6s Plus as a two-handed device, like an iPad mini, but Apple has also added a clever interface feature called Reachability that pulls the screen downwards when you double-tap.

These considerations are the same as for last year's model. But one major change to the physical design concerns the thickness and material of the metal chassis.

### **'Bendgate modifications': Series 7000 aluminium and reinforced sides**

The 6 Plus suffered from an (almost certainly overstated) problem known as Bendgate, which saw a handful of users complain that their devices had bent as a result of being placed in a tight pocket for some time. The 6s Plus bears obvious clues that Apple took this issue to heart. Its metal chassis is both thicker around the vulnerable, bend-prone areas, and made of a stronger aluminium alloy.

Previous iPhones have been made of 6000-series aluminium alloy, whereas the 6s Plus is made of the stronger (and lighter, and costlier) 7000 series. The

new iPhones are clearly tougher to bend than their predecessors, and the fact that Apple has been able to make this change without increasing the cost from last year's models is impressive.

## Display

The specs of the iPhone 6s Plus's display are identical to those of its predecessor. Like on the 6 Plus, we're looking at a 5.5in touchscreen with an (exceptionally high) resolution of 1920x1080 and a pixel density of 401 pixels per inch (ppi). Considering that the Retina-rated 326ppi of the iPhone 4 and onwards was once supposed to be the sharpest a human eye could perceive, 401ppi is nothing to be sneezed at.

A 5.5in screen is huge by iPhone standards, of course, and if you're not familiar with the 6 Plus, it's worth restating that a display of this magnitude is fabulous for gaming, movies and TV.

## 3D Touch

The single most important upgrade in the new generation of iPhones – both in terms of genuine tech-culture significance and trivial 'wow' factor – is 3D Touch, without a doubt. This is the Force Touch pressure-sensitive tech seen in the Apple Watch's screen and the 12in MacBook's trackpad, but upgraded to produce separate interface commands in response to three levels of pressure rather than two. (In certain contexts, at any rate. In some apps you'll find that your options are limited to just 'tap' or 'deep tap'. Indeed, at this point you'll find that most non-Apple apps haven't got any 3D Touch functionality at all.)





So you can tap the display of the iPhone 6s Plus normally; or you can do a harder/deeper press; or you can press it harder still – and each level of pressure will (potentially, depending on the app) do something different. If you're worried about judging precisely how hard to press, there is haptic feedback – a brief gentle buzz under the screen – that lets your fingers know what is going on and whether or not further pressure is required.

(We're not blown away by the clarity or strength of the feedback, and it's worth stressing that it isn't anywhere near as obvious a sensation as the fake click you get on the Force Touch trackpad. When you're tapping an icon or element near the top of the screen, in particular – presumably because you're further away from the buzzer unit – you often feel almost nothing at all.)

Interface commands vary from app to app, but the unifying principle behind the three types of

tap is that the first activates an app or command in the traditional way. The second activates a 'Peek', previewing whatever you're touching, whether an email, a map view (by Peek-tapping on a set of directions), a web page (by Peek-tapping on the URL), and so on. Further actions and gestures are possible from the Peek view, such as marking an email as read or deleting it, but you can return to wherever you were at any point by lifting your finger.

Finally, pressing deeper still closes the preview and opens whatever you were tapping in the relevant app.

This seems handy (following the same principle as interactive notifications, allowing you to interact with another app without leaving the one you're in currently), but potentially handier (because simpler to grasp) is the ability to Force Click app icons on the Home screen in order to see a short menu of commonly used instant actions, in effect allowing to jump straight to a specific function of a specific app with a single tap. You can Force Click the camera icon, for instance, and see the options to record video or take a selfie. Force Click the Facebook icon and you'll see the option to post a status update. And so on.

These are the two main aspects of 3D Touch that Apple has talked about so far, but there are more to discover. If you do a deeper-press on the keyboard when typing in a tweet or email, for example, you gain control of a virtual cursor:

The 6s Plus offers three degrees of pressure – corresponding to a normal tap, Peek and Pop in many apps – which makes the interface more complex again. We fear that the iPhone's legendary



clarity, the proverbial way that toddlers can pick up an iOS device and instinctively use it in roughly the right way, is in some danger.

It's possible that 3D Touch will become culturally all-pervasive, widely imitated and discussed and understood by most within a few years at most. Conversely, it could remain as a secondary interface layer that's available to iPhone users who get past the beginner stage, provided that apps can be used to a decent level of functionality without knowing that Peek and Pop exist.

## iOS 9

Aside from the new hardware features, it's worth pointing out that numerous significant upgrades arrive with new versions of the iPhone's iOS software each year. iOS 9, which is preinstalled on

the 6s Plus but can be installed on existing iPhones too, offers a plethora of new features, including:

- Proactive contextual assistance (shortcuts to apps and contacts that iOS has observed that you tend to use a lot at the current time, links to locally trending news stories and the like)
- Low Power Mode for preserving battery
- A dedicated News aggregator app
- Public-transport directions in Maps

## Camera

For the first time since the iPhone 4s, Apple has increased the megapixel rating of its iPhones' principle (rear-facing) camera, from 8Mp on both iPhone 6 models to 12Mp here. (It can also shoot 4K video.) The front-facing camera gets a bigger bump, going from 1.2- to 5Mp.



## Live Photos

They're not videos, Apple insists, but you certainly can't call them still photos. They're something in between. Live Photos are taken normally – assuming you've got the Live Photos option enabled, every photo you take with an 6s Plus will be a Live Photo – but by automatically recording and storing video of the 1.5 seconds before you click the shutter and the 1.5 seconds afterwards, iOS 9 packages up three seconds of video with the still shot. You can choose to animate the photo at any point, generally by deep-pressing it.

When you're swiping through your photos, any Live Photos will advertise their nature with a very short animation; deep-press them and they will do the full (but still only three-second) animation. You get the single-image sharpness of a still photo, but the life and interest of a short video.

You can set a Live Photo as your lock-screen wallpaper, and deep-pressing will cause the animation to trigger. We understand that they can also be exported as Apple Watch wallpapers, although we've not had a chance to try this.

Our experience has been a bit hit-and-miss. The videos have been rather lacking in smoothness, and often seem to glitch somewhat (repeating part of the three-second chunk at the beginning and end). And we're not taken any particularly memorable clips. We're still getting used to the feature, though, and much of its appeal lies in the occasional gold that can be discovered beneath the dross of boring or bad photos. It only needs to work well from time to time to earn its keep. If you wanted a proper video, of course, you'd just take one.

Apple was keen to play down fears that Live Photos will be storage killers, and the fact that they are just three seconds should limit the damage they can cause in this respect. But those plumping for the 16GB 6s Plus would probably be advised to exercise caution when taking – or keeping – Live Photos.

## Price

The 6s Plus is available in three storage flavours: 16GB, £619; 64GB, £699 and 128GB, £789.

There are four colour finishes to choose from: silver, gold, Space Grey and the new rose gold.

## Macworld's buying advice

"The only thing that's changed is everything," says Apple. Not quite true, it must be said, but there are certainly more significant upgrades and rethinks in the 6s Plus than we'd expect from an S-class update.

3D Touch is a major change, with immense potential. We can see it going in either of two directions: becoming a baffling distraction for beginners and a rarely used gimmick for the rest, before being quietly phased out a generation or two down the line; or unlocking umpteen new interface improvements, inspiring the imagination of genius app devs and saturating tech culture until we can barely imagine smartphones without it. I suppose it could fall somewhere between the two, but a positive outcome seems likely at this point. .

The increase in camera specs is nice to have (front- and rear-facing), although judging the real-world benefits calls for more prolonged testing. More immediately appealing is the new Live Photos feature: very cool, if unlikely to produce

long-term changes to the user experience as profound as those instigated by 3D Touch (and still a bit hit-and-miss in our experience).

Other than these, you're looking at a carbon copy of the larger member of Apple's most successful ever iPhone generation, with a slender (and now reinforced) body and a giant screen. Pretty much all of the things that made the 6 Plus a bestseller still apply, with the added wow factor of 3D Touch, Live Photos, better cameras, a faster chip backed by more RAM and, apparently, a faster and more reliable edition of Touch ID (a winning prospect for those who, like me, find the fingerprint sensor in the iPhone 5s a source of despair). This is a speed demon with a charming bag of new tricks.





## Review: OS X El Capitan

Mac upgrade that's as solid as a rock

In these days of free operating-system updates, major OS X updates feel a whole lot more routine than they used to be. Apple has chosen not to roll out major features piecemeal throughout the year, though, which still makes this the biggest change your Mac will experience this year.

El Capitan, named after the large granite rock formation inside Yosemite National Park, is very much a refined version of OS X Yosemite, a recognisable progression from its predecessor. (In iPhone terms, it would be Yosemite S.) Apple says this update is all about a refined experience and improved performance. But it's traditional for Apple to take its no-big-deal updates and pour in a bunch of new features anyway, and El Capitan



is no exception. This is a packed release, but one that makes sense as a follow-up to Yosemite.

## **Just the basics**

Before we get started, it's worth recapping what this El Capitan business is all about. El Capitan is Apple's marketing name for OS X version 10.11, the latest update to your Mac's system software. If your Mac is running Yosemite (10.10), Mavericks (10.9), or Mountain Lion (10.8), it can run El Capitan. Beginning September 30, you can download El Capitan straight from the Mac App Store. And if you're running an older version of OS X, you don't need to do interim upgrades – you can go straight to El Capitan from Snow Leopard or later.

If the update will be free and readily available, what's the big deal? Often people are cautious about upgrading their computers. If an app you rely on is incompatible with the new version, your entire workflow can be broken. It's worth being careful and checking with the makers of any apps you rely on before upgrading – most will post compatibility information on their websites.

In the case of El Capitan, a few of the apps and utilities we rely on weren't initially compatible, but most have already been updated as a result of Apple's summer-long testing period. Most major OS X upgrades feature a lot of under-the-hood security improvements, which is a good reason to stay up to date, but some of those changes can also break software. Several of the apps we use, including SuperDuper and Default Folder X didn't work properly with El Capitan, but SuperDuper has already been updated to regain compatibility and

Default Folder X has a new version on the way (and a workaround in the meantime).

One of the security improvements in El Capitan is a feature called System Integrity Protection, which clamps down on the ability of malware to hijack your Mac by masquerading as a user with system-administration privileges. This is a good thing – but a few apps, including Default Folder X and SuperDuper, relied on that same vector to do their jobs. You can turn off System Integrity Protection if you absolutely need to, but it seems like most apps will be able to function just fine with it turned on. (It's just that some of them may need an update first.)

**Bottom line:** We've found El Capitan to be a stable update, but you should always back up your system and check with the makers of your most important apps about compatibility before installing it.

## A saner Mission Control

We all use our Macs in different ways – and even the same person can use a giant 5K iMac in a different way than they use an 11in MacBook Air. Our gut feeling is that there's a devoted (but small) subset of Mac users who love using Mission Control (formerly Exposé) to arrange their windows and workspaces, or frequently use Full Screen mode for apps. If you're one of those people – or if you've always been tempted to improve how you organise your workspace, We've got good news for you: El Capitan offers quite a few boosts to Mission Control and Full Screen Mode.

The most notable addition is the new Split View feature, which appears to be designed to



be reminiscent of the Split View feature that appears on some iPads in iOS 9. Unlike the iPad, though, Mac users have always been able to run two windows next to each other. Still, what Split View is really doing is adding an extra dimension of utility to full-screen view. Now it doesn't just have to feature one app stretched out to take over your entire screen – you can split the space between two apps, one on the left side and one on the right.

Entering Split View is actually quite clever. If you click and hold on the green plus/maximise button in a window's title bar, you'll be prompted to choose which side of the screen you'd like that window to be placed on. Then Mission Control will activate on the other side of the screen, letting you choose any of your currently open windows to use as the first window's split-screen buddy.

Converting full-screen mode to split-screen mode isn't without its interface quirks. We noticed

that, depending on how an app presents itself in full-screen mode, sometimes it could be very hard to tell which app was active/frontmost. That sometimes led to unexpected behaviour – for example, we tried to zoom in on a PDF in Preview by spreading our thumb and index finger on the trackpad, but it didn't work because we hadn't clicked on the window to activate Preview yet.

Since it seems that Split View is just a modified version of the old full-screen view, there are probably going to be some quirks like this – with apps assuming they're the only app you can see because you're in full-screen mode, even though they're not – until they're modified to adapt to the El Capitan world.

Like full-screen view, we're not sure Split View is going to appeal to anyone but users of laptops, and even then, it's more likely to be appealing on smaller laptops. If you've got a large monitor, full-screen view is often overkill, because few apps are designed to take up all that space. (There are, of course, exceptions – when we're editing audio in Logic Pro X, it's using every pixel of my 5K iMac screen.) But at least with El Capitan, you've got the option of having two different apps share full-screen view. On a smaller display, such as this reviewer's trusty 11in MacBook Air, it's a nicer experience.

Perhaps our favourite addition is to Mission Control itself. The entire feature feels friendlier and makes more sense than it ever has before. Mission Control now does a much better job of organising and presenting your open windows. Every window gets its own thumbnail, rather than piling all of an app's windows in a big stack. And when you

engage Mission Control, your windows don't fly all over the place – they slide around in order to bring every window into view, sure, but the feature keeps geography in mind. This means that a window that's in the top-right corner of the screen will stay near the top-right corner when Mission Control is activated.

The Spaces Bar – that strip at the top of the screen that appears when you activate Mission Control – has also had a major upgrade. First, it's collapsed by default, giving more space to your windows when you activate Mission Control. When you move your cursor over the Spaces Bar, it expands. You can also drag a window to the top of your screen, and Mission Control will automatically activate with the Spaces Bar expanded, so you can toss a window into a new or existing workspace.

Finally, in a boost to the new Split View feature, if you move your cursor over a space that contains two apps in Split View, you'll see a small icon that allows you to blow the Split View apart – bringing both windows back to your existing workspace. When you click it, you'll see the two windows slide back into their place in the Mission Control landscape.

## **Search (in Spotlight and elsewhere)**

Between Siri and Spotlight, Apple continues to build up its collection of searchable data sources. On iOS, Siri and Spotlight seem to be merging and mingling in interesting ways. On OS X, those data sources crop up in a bunch of different places: They're in Spotlight, yes, but you'll also find them in Safari. With El Capitan, Spotlight and Safari both have access to weather, stocks, sports, transit and web video, as well as support for natural-language queries.



Yes, this means you should be able to type “Chelsea standings” into Spotlight and be given the bad news from the Premier League, or “London weather” and get the bad news. It also means you can type queries like “pdfs from June 2013” or “presentations from august 2012” into Spotlight or Finder and get the result you’re expecting.

We like this approach, because the fact is that many people search using natural language queries regardless of whether their search engine of choice supports it. A lot of us want to type, “how do I delete my Facebook account” into Google, rather than carefully crafting a string of search terms. So Spotlight gets smarter, we get to be lazier, and it should all work out.

There’s one improvement to Spotlight that we applaud wholeheartedly, and it has to do with the Spotlight window itself. Last year, Yosemite cut the cord between the Spotlight window and

the Spotlight icon in the top-right corner of the Menu Bar. It floated in the middle of the screen, disconnected from the icon it was supposedly attached to. Now with El Capitan, you can move the Spotlight box anywhere you want, and resize the results window, with the menu bar icon serving as nothing more than a shortcut.

## **Safari pins its favourite sites**

With El Capitan comes a new version of Safari, version 9, and it's got some clever new features. We have to admit that we still use bookmarks (and don't use RSS), and we enjoy the new Pinned Sites feature in Safari 9. Pinned Sites are like mega-bookmarks – or if you prefer, they're a simpler, more visual version of the Favorites Bar. Drag a tab into the left corner of Safari's title bar and it will stay there permanently, with a little icon (or letter if the site in question hasn't built a special custom icon for use with Pinned Sites) to distinguish it.

Pinned Sites are kept refreshed, so with one click you can see what's new on your favourite site. Clicks that lead to other pages on the site are loaded in the pinned site's tab, but external links all open in separate tabs, keeping your pinned site right where it is. As someone who likes to bookmark a few very-favourite sites and visit them regularly, this has the makings of a cool feature.

This feature does change Safari's keyboard shortcuts and tab behaviour, however. Since Pinned Sites are always open, if you try to close a Safari window when viewing a Pinned Site, it will switch you to a new tab instead. If you have a single tab open that's not a Pinned Site, it will close the entire

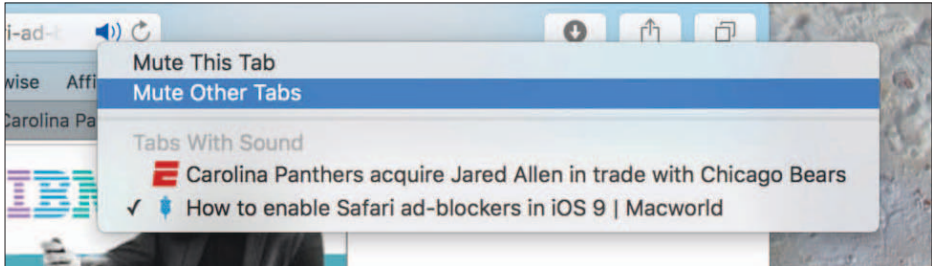
window. But if you open a new window and navigate back to the Pinned Site, you'll find that it's still on the page of the Pinned Site that you last visited.

If you're used to navigating the first item in the Bookmarks Bar by typing  $\mathbb{S}$ -1, you'll also have to get used to a change.  $\mathbb{S}$ -number shortcuts are now reserved for navigating Pinned Sites and browser tabs, moving from left to right. We used to have a personal weather station page as our first Bookmarks Bar item; now we've made it our first Pinned Site, so we can keep the same shortcut. You can also access all the Bookmarks Bar items by adding in the Alt key, in the format  $\mathbb{S}$ -Alt-[number].

Nobody likes blaring audio from pages that automatically play videos when the page loads, and if you're someone who likes to open articles in multiple tabs, you can very quickly have several different videos playing in different tabs. In Safari 9, you have much more control over where audio plays in your browser. With one click on the speaker icon in Safari's Smart Search bar, you can mute the audio in the current tab. Or click and hold on that icon, and you'll see a list of all tabs that are playing audio – with the option to mute the sound from the currently open tab or from all the non-visible tabs. You'll also see a list of all tabs that are playing audio in that list. Tabs playing audio are also indicated by a speaker icon in the tab itself. This is a really great feature that we look forward to using when we're browsing the BBC, Macworld, and many other of our favourite sites, which we visit only to read the articles.

Safari Reader, which gives you a simplified view of a complicated page layout, has added more display preferences. In the Yosemite version of Safari, you





can make the text larger or smaller, but that's about it. In Safari 9, you can not only adjust text size, but also choose from four colour themes and eight typefaces. It's a good look, especially when we're reading at night and prefer a light-on-dark theme.

Finally, anyone who has been frustrated that they can't easily send a video they're watching in Safari and play it on their TV – something that's easily done on an iOS device – will be happy to know that Safari now supports AirPlay video. If you're playing a video that's compatible with AirPlay, you'll be able to see an AirPlay icon right on the video within Safari, and can select it in order to send that video to an AppleTV via AirPlay.

## Admit you use Notes

Nobody likes the Notes app. The App Store is full of apps that outdo it at the job of taking notes, creating shopping lists, you name it. But it has one major thing going for it, namely that it's on every Mac and iOS device in existence. We admit it: we use Notes for all sorts of things.

Like taking selfies (or using the iPad as a camera), Notes is something people use, so Apple might as well put some effort into making the experience better. And so with iOS 9 and El Capitan, Notes

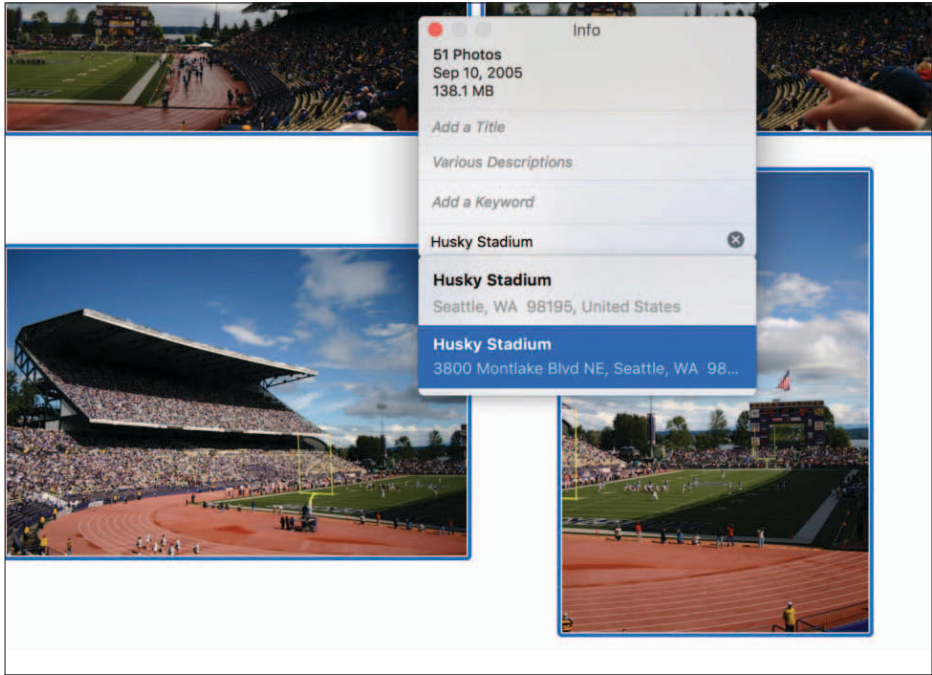
has received a major upgrade. Now you can stick a whole bunch of different files – PDFs, images, even videos – into a note. You can sketch notes on iOS and view them on the Mac – but not create them yourself. Notes is also now an option in the Share button, so you can send data to it from any app that displays a share sheet.

To create a checklist in Notes, you just select some text and click the Checklist button in the toolbar. That's it – every line gets a little checkbox in front of it, and you can check them on and off at will. The checkboxes aren't connected to anything, and clicking them doesn't do anything except check and uncheck them. But if you're making a quick to-do list, maybe that's all they need to do.

Up to now, Notes was one of the rare Apple cloud-connected apps on OS X that didn't actually use the iCloud infrastructure. Instead, it connected to a special IMAP mailbox in one of your connected email accounts. (If you've ever searched your Gmail and seen a dozen different notes files in your results, this is why.) But starting with El Capitan, Notes can also use iCloud proper. In fact, for most of the more advanced features –including checklists, fancy links, and access to the type style menu – you'll need to use iCloud. Fortunately, you can easily drag all your old notes from your email account right into iCloud, and they'll transfer over.

## **Photos gets extended**

The first version of Photos for Mac was not without its power features, but while we were working on this review we heard from readers who had opinions about the most important features it omitted.



Fortunately, some of the most common complaints have been addressed with the new version of Photos that ships with El Capitan.

The biggest addition is editing of image data, individually and in batches. In Photos version 1.1, you can add location information to either a single photo or an entire batch, and batch-change titles and other information. To do this, open the Inspector window. A not-yet-geotagged image will offer a section of the window labelled Assign a Location. Clicking in this area will let you enter a street address or a name of a point of interest, and Photos will search Apple's Maps database. You can also just click on the pin and drag it around the map, placing it wherever you like. To batch-change titles,

descriptions, or keywords, just select a bunch of images and input the new information into the Inspector window.

Another huge reader complaint was about a lack of flexibility in sorting albums. (The first version of Photos let you sort them any way you want, as long as it was by date.) The new version of Photos will let you sort them by date and title, as well as keep them in a custom order that you determine by dragging images around.

Photos on El Capitan also supports image-editing extensions written by third-party developers. If there's a particular editing effect or tool that isn't available in Photos, a developer can write an extension that provides that feature, and it can be accessed from within Photos. A bunch of different Extensions are on the way – we tested a couple of them, and many will be released alongside El Capitan.

While you can edit photos using Extensions right within Photos, they aren't as integrated into the app as the built-in tools. Basically, the edits that you make in an Extension are done on top of a version of your photo. If you've applied other effects, those effects are 'burned in' – you can't apply a black-and-white effect, then add some distortion effects with an extension, and then remove the black-and-white effect. Fortunately, Photos always lets you revert to the original version of the photo if you need to start again.

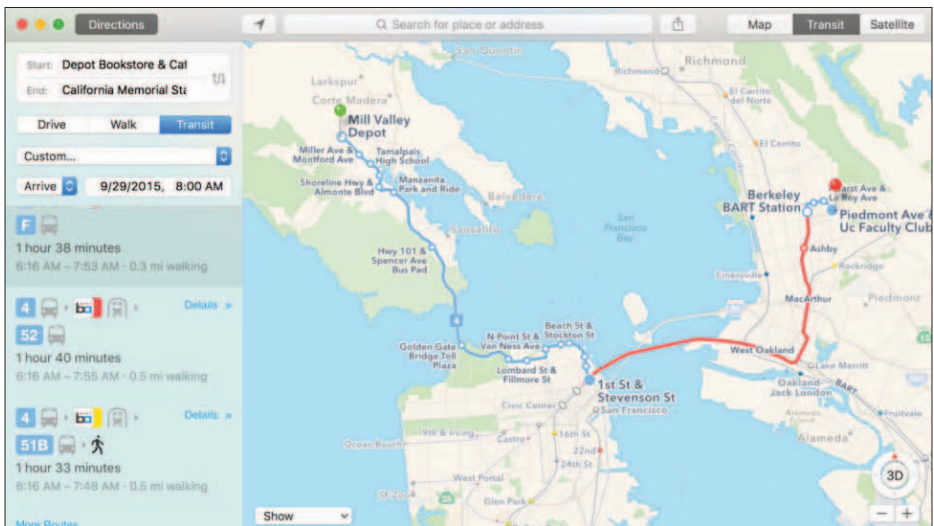
Adding Extension support to Photos opens up a whole new set of capabilities, from the serious to the silly, all without ever needing to leave Apple's next-generation photo editor. It's a good thing.

## Other bundled apps

Of course, every OS X update brings upgrades to many other Apple-built apps. Mail and Maps both received nice updates this time around.

Taking a cue from iOS and from some third-party competitors, Mail now allows you to use the trackpad to swipe messages into the trash or to mark them as unread. Trackpad-oriented users will appreciate the shortcut, and there's a preference to let you choose whether a swipe deletes a message or archives it.

For quite some time now, OS X has had the ability to detect certain kinds of content in your email messages – names of contacts, events, dates and times. In El Capitan, Mail does a much better job of putting that information in context. If a potential event is mentioned in the text of an email message, such as 'let's have lunch on Thursday', Mail will add a banner above the top of the message body that displays the event and provides an 'add event' link



to quickly add it to your calendar. Likewise, if the person mailing you doesn't appear in your Contacts list, the app will display a banner indicating that it's detected a possible new contact with a quick 'add contact' link.

But perhaps the best feature in Mail is one that lives under the hood and addresses a long-standing problem with the app. In El Capitan, Mail prioritises showing you new mail in your Inbox and prioritises the downloading of the messages or mailboxes that you're currently viewing. It's an improvement that's been a long time coming, but it's finally here.

The banner feature in Maps is public transport maps, which are available in London, eight North American cities, and over 300 cities in China. When we're planning a trip, we usually first explore the trip on our Mac but, of course, when we're making the actual journey we're using our iPhone. In El Capitan, we can directly share the route with any other iOS device connected to our Apple ID, so we can send my trip directly to our iPhone (and Apple Watch) with a couple of clicks.

## **Improving performance**

Under the hood in El Capitan, Apple has made a bunch of changes that you might not notice – but that might bring you a big benefit. The tech giant brought Metal, its graphics technology, over from iOS, and has dropped it in as a replacement for the old OpenGL technology. Many of OS X's key graphics frameworks, including Core Animation and Core Graphics, now use Metal rather than OpenGL. The end result should be that all sorts of parts of the Mac interface should feel snappier.

Apple says that apps launch faster in El Capitan, that switching between apps is faster, and that opening and moving around in PDFs in Preview is faster. We booted back and forth between Yosemite and El Capitan partitions on my 5K iMac and couldn't really notice the difference, but perhaps it's more noticeable on slower systems.

Games, in particular, should benefit from the switch to Metal – assuming games are built to take advantage of it. Sharing a graphics technology with iOS should help a whole lot, since once developers do the work to use Metal on iOS, they can apply that work to the Mac as well. Adobe, too, has committed to using Metal in a future update to its Creative Suite, which should likewise improve performance on existing Mac hardware.

## **Macworld's buying advice**

It's not the most exciting word, but we keep coming back to routine as a way of describing the upgrade to El Capitan. These days, OS X updates are free, are compatible with pretty much every Mac that could run the previous version, bring with them all the most important security and stability fixes, and on top of all that, there are a bunch of new features and updates to apps that you use every day.

There was a time, only a few years ago, when OS X updates were fraught with 'should-I-or-shouldn't-I' peril, along with a real price tag. Those days are long gone. Should you update to El Capitan? Unreservedly yes – we've found it to be stable, it's free, it'll download and install itself on your Mac with nearly no intervention, and it'll bring with it improved security, speed, and functionality.



## WatchOS 2 features

Apple's 'most personal device' just got better

Just five months after Apple launched what it calls its “most personal device ever,” the company released watchOS 2, the second-generation OS that makes its smartwatch much more useful. From apps that run natively and third-party watch face complications to colourful Digital Touch sketches and deeper Apple Music integration, watchOS 2 packs in a variety of new features. If you weren't already planning to buy an Apple Watch, watchOS 2 might not win you over, but the upgrade is a definite improvement for watch owners.

### 1. Apps gone native

Apple Watches shipped with watchOS 1.0, which supports third-party apps but requires them to push all of the heavy lifting to your iPhone. Apps that don't run natively (so anything other than Apple's built-in watch apps) couldn't tap into



all of the watch's hardware features, like the accelerometer, Taptic Engine, microphone, and heart rate sensor. That changed with watchOS 2. Apple has opened its features to app developers to let them test the watch's boundaries.

Instead of waiting for the watch's native Activity app to relay your heart rate to the iPhone Health app using HealthKit, third-party apps can run natively and collect that information on their own. Ideally, this means we'll see developers make use of features such as the Taptic Engine in really interesting ways. Watch apps also run much faster, because native apps don't have to wait for your iPhone to respond.

## **2. Activation lock**

Apple has faced criticism over the Apple Watch's security – specifically, how easy it is to steal and wipe the watch, even if you don't know the passcode. WatchOS 2 changes that with Activation Lock. When you activate your Apple Watch, you'll be required to enter your iCloud Apple ID and password, so the device is tied to your account and no one can use your watch if it's stolen. This feature is optional, but a good move on Apple's part.

## **3. New faces**

The current line-up of Apple Watch faces is appealing, but just like with your iPhone home screen background, sometimes you'd rather personalise your device than use a stock image. WatchOS 2 allows you to choose from either a time-lapsed skyline scene (which looks very cool in action), a still photo from your own collection, or

a curated album of favourites that rotates through images in your library every time you raise your wrist. It's a simple change, but a welcome one.

## 4. Third-party complications

Some watch faces (though not the new ones added to watchOS 2) show complications – little pieces of helpful information like the time in other cities, the temperature outside, and how close you are to reaching your Activity goals. The new OS opens those complications to app developers, so you can add even more information to your watch face – or swap out weather with something more relevant to you, like your airline departure time.

## 5. Time travel

The next-gen watchOS offers a new way to view your life with Time Travel. The new feature gives you an overview of your day (or yesterday, or tomorrow). Just use the Digital Crown to scroll through your schedule and see contextual information like what the weather will be like during your trip tomorrow or the emails you missed from yesterday. A press of the Digital Crown returns your display to its watch face.

If this feature sounds similar to Pebble's Timeline, well, that's because it is.



Timeline isn't quite as elegant as Time Travel, but it's an innovative way to use time as a user interface that goes beyond just numbers on a display. Like Timeline, Time Travel pulls in information from third-party apps, and is particularly useful on watch faces that allow third-party complications.

## **6. Apple Pay rewards you**

The ability to use retailer loyalty programs and store credit and debit cards is a must-have for many Apple Pay users, and soon that support will roll out to both iPhones and Apple Watches. Just double-click the side button and pick the card you want to use, same as before. Except now you'll be rewarded with points that you would otherwise miss out on, which might boost Apple Pay's use.

## **7. Public transport on your wrist**

We like the Maps app for Apple Watch, which taps you on your wrist to give you turn-by-turn directions instead of verbally interrupting you. But, just like on the iPhone, Maps lacked crucial information for people in major metropolitan areas: public transit directions. Like iOS 9, watchOS 2 has had a major Maps upgrade, complete with public transport info. The watch's Maps app even gives you walking directions to and from your transit stop, so you never have to reach for your iPhone.

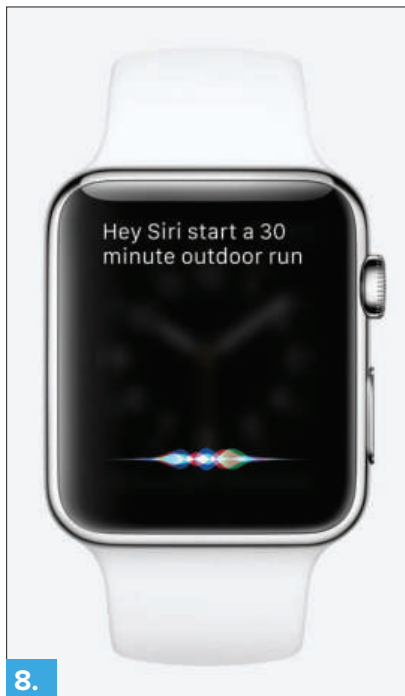
## **8. Siri's new powers**

Because you can only use your voice to communicate with your watch, not text, Siri has become more useful than ever. WatchOS 2 upgrades her to the next level with new capabilities: now

Siri can start a workout for you, retrieve public transit information from Maps, open Glances without a swipe, and communicate with your HomeKit accessories based on your verbal commands.

## 9. Wake me up

When we take off our Apple Watch at night and plug it in, it becomes, for all intents and purposes, useless to me. It doesn't do anything but sit there and tell us how charged its battery is. That's useful and all, but watchOS 2 makes your charging watch informative with Nightstand mode. When you tap the screen, the Digital Crown, or the side button, the watch will display the time, date, and battery percentage. And when you set an alarm on your watch, you'll be able to click the side button to turn it off or the Digital Crown to snooze it.



8.

## 10. Circles of 12

Some Apple Watch owners have more than 12 friends and felt limited by the number of slots you could fill in your watch Friends. With watchOS 2, you can add multiple groups of 12 and organise those contacts, the groups, and their names in your iPhone's Apple Watch app. You can also add friends from your Contacts list directly on your watch.

## 11. Live Photos on the wrist

If you can't (or don't want to) buy an iPhone 6s or 6s Plus, you won't get to see Live Photos, one of the marquee features Apple trumpeted at its September event. But if you are upgrading to the next-generation iPhone and can shoot Live Photos, which record the 1.5 seconds before and after you shoot an image, you can then set one as your watch face wallpaper. It's like watching a Gif on your wrist. (Though time-lapse photos are also very cool and somewhat similar, for those not upgrading.)

## 12. Screen stays awake

One of the watch's little irritations on launch was its inability to stay awake longer than 15 seconds. If you raised your wrist to check the time and let your eye wander instead of reading the screen, you'd completely miss it.

But now you can change that in your watch's settings or the Apple Watch app on your iPhone by tapping through My Watch > General > Wake Screen and picking the option for the display to stay awake for 70 seconds instead of 15 when you tap it. This makes the watch much more useful as a watch, where the time stays visible for as long as you need it to.

## 13. Apple Music perks

We use the Music app on my watch every day to control what we're listening to on the tube without having to take our phone out of our pocket or bag. With watchOS 2, Music loads so much faster. It also gets a nice home screen icon, so we don't keep accidentally tapping on Remote instead of Music. But

watchOS 2 gives Music an overhauled navigation menu for quick access to Beats 1, My Music, Playlists, and a new option called Quick Play, which launches a random song from Apple Music (or your iTunes library, if you're not an Apple Music subscriber). If you are a subscriber, you also get the bonus of being able to heart a song from the Now Playing glance, or add/remove it from your music library.

## **14. Reply by mail**

Apple gave its most-used native watch apps a much-needed boost, and that includes Mail. With watchOS 2, you can finally reply to email messages without resorting to your iPhone – though in keeping with the watch's best uses cases, you can only send short-and-sweet replies. Choose from preset responses, which you can create yourself in the Apple Watch app on your phone under My Watch > Mail > Default Replies. You can add up to 20 custom messages. Your replies will come with a 'Sent from my Apple Watch' signature, just like on the iPhone – that, too, is customisable.

## **15. Digital Touch gets colourful**

Digital Touch is one of the watch's most playful features, because it allows you to sketch images or send your heartbeat to an Apple Watch-wearing friend. But the sketches were a little sad, because you could only draw in one colour. Now you can send sketches using multiple colours, so red roses can at long last have green stems, or blue skies can have fluffy white clouds. (That's the extent of our drawing skills, so you get a little more creative with this new feature.)



## iOS 9's best features

25 new features that are rocking our world

**A**pple's newest iOS is far from a drastic overhaul, and that's okay. Sometimes it's the most subtle tweaks that have the biggest impact. And iOS 9 proves that. Now that iOS 9 is available, here are some of our favourite features that could make using your iOS device a lot easier.

## 1. App switcher

iOS 9 makes browsing through all your apps as intuitive as flipping through a deck of cards. As always, double press the Home button to start flipping through your apps, which will show up on the left side of the screen this time.

## 2. Using Mail for smarter caller ID

The new iOS relies on the data from your Mail app to gather more information about your Contacts. This is an optional feature in Settings, but if activated, you'll get email address autocomplete suggestions. It will even try to guess an unknown number.

## 3. New ways to navigate in Photos

iOS 9 makes it easier than ever to scroll through and select your photos. Open a photo and you'll see a new scroll at the bottom to zoom back and forth between all your pics. Want to select a bunch of photos? You don't have to tap each one by one individually. Just pick one photo and then swipe over to the rest of the photos you want to select.





#### 4. Contact thumbnails in Messages

Previously only iPhone 6s Plus users got to see a circular thumbnail of their contact's face in Messages. iOS 9 brings this feature to all iPhone models, so now you can put a face to a name.

#### 5. Notifications view by most recent

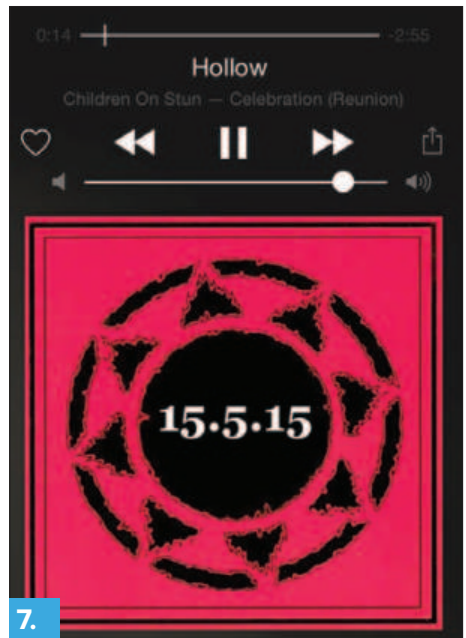
In iOS 9, your notification view is now organised in chronological order, so the most recent notifications remain at the top. You have the option to change this in Settings, by opting to group notifications by app.

#### 6. Siri suggestions in Spotlight

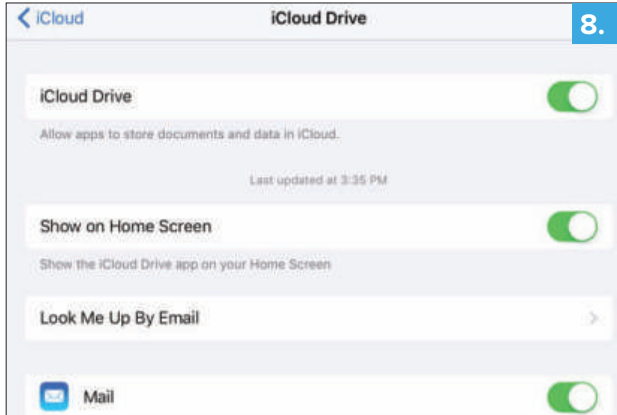
Siri in iOS 9 surfaces a bunch of proactive hints based on how you use your iPhone. Do you call your mum every day before dinner? Spotlight will have her as a suggested contact. Check Instagram for hours before bed? Spotlight will help you indulge in your nighttime ritual, too.

#### 7. Music responds to plugging in earbuds

Another cool proactive feature: Every time we plug in my earbuds, the Music app launches automatically. Not only that, but it's set on the song we're most likely to be listening to during that time of day, so we can start our music listening routine without even unlocking our phone.



7.



## 8. Access the iCloud Drive app

Ever wonder what documents you've got stored on iCloud? iOS 9 gives you the option to access your iCloud Drive via a new native app. In Settings, just toggle to show the iCloud Drive app on the Home screen to access it. iOS 9 also lets you add an attachment in Mail directly from your iCloud Drive.

## 9. iPad only: Two apps at once

If you have an iPad Pro, an iPad 2 or a mini 4, then you get an extra iOS 9 feature: Split View, or the ability to use two apps at once. For example, if you're looking at a restaurant listing in Maps and click on the website, the URL will launch in Safari so you can view both at the same time.

## 10. Reach Contacts directly from Spotlight Search

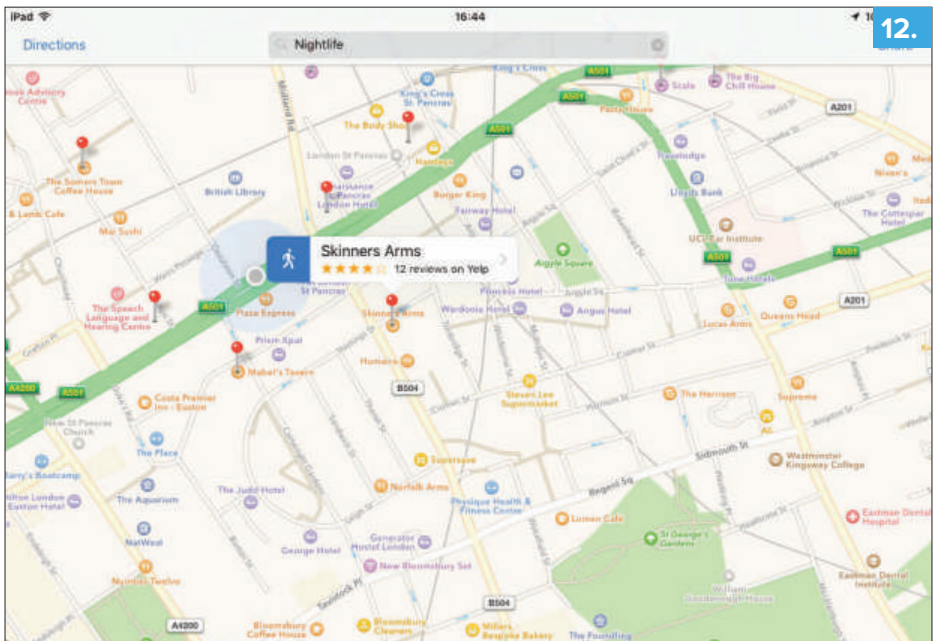
The Spotlight screen gets added functionality. For example, search for a Contact and you'll get the option to call them, send them an iMessage or FaceTime them directly from the search results.

## 11. Access the Wallet from the lock screen

In iOS 9, you'll be able to fire up the new Wallet app (and Apple Pay) directly from the Home screen, even when the screen is locked. This makes it easy to use Apple Pay to pay for everyday purchases. Previously, you could launch Siri from the locked screen and reply to a message, too.

## 12. Nearby suggestions in Maps

In addition to transit directions, Maps gets Nearby suggestions for local businesses. Instead of typing 'Bakeries', you can now just tap the Food icon, followed by the Bakeries option to get a list of nearby places where you can get your croissant fix. You can also get suggestions for Shopping, Travel, Nightlife, and other Services.



## **13. Low Power Mode to squeeze extra battery life**

We can't say enough good things about Low Power mode. We love that it asks at 20 percent and again at 10, and then turns itself back off automatically once you're charged up to 80 percent. And you can still use almost all the functions of your phone: Wi-Fi, Bluetooth, Location Services, GPS, everything. The screen goes to sleep a little quicker than before (which means we have to keep tapping idly in Alphabears while we're staring at the screen contemplating my next move), and you can't use AirDrop or Continuity, but who cares when it means our phone no longer needs a mandatory topping-off every day at around 7pm.

## **14. Automatically organise your selfies**

A new small tweak to the Photos app in iOS 9 has made it easier to keep all your pictures organised, especially if you're a selfie enthusiast. Photos taken with the front-facing camera get automatically placed in a 'Selfies' folder, while screenshots taken by pressing the Home button and the power button get their own dedicated folder as well.

## **15. The new San Francisco font**

The custom Apple-designed font that was first used on the Apple Watch interface comes to iOS 9. This new San Francisco font is used in Settings, Spotlight search, and in the native apps. You can even choose it as the default font for your iBooks collection. The sophisticated yet easy-to-read font may be subtle, but we noticed it from the first time we swiped open the lock screen.

◀ Back to Twitter

9:56 PM

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## 16. Intuitive Shift key

We like the subtle tweaks made to the standard iOS keyboard – especially the new Shift key. We know, this is far from revolutionary, but it makes it much easier to tell if the caps is turned off or on when your entire keyboard displays the letters in upper- or lowercase letters.

## 17. Go back to previous apps with tiny, new Back button

We're big fans of the Back button. If we are in, for example, Twitter, and we get a notification from Instagram, we can tap that notification, switch to Instagram, tap all around inside Instagram, and still get back to Twitter with one tap. Although we could do that before with the application switcher, the back button is a lot more obvious.

## 18. Sharing content into Notes is a game-changer

The Notes share sheet is a game-changer, letting you embed websites, maps, and photos in a to-do list. Once third-party apps support the share sheet, your notes will become richer and more useful than ever before.

## 19. Siri is now your new personal DJ

In iOS 9, Siri is a lot smarter. Not only does Apple's digital assistant serve up information about the weather or different directions, but it can answer complex queries such as 'show me photos from last summer'. The most exciting part, however, is how well it knows out Apple Music collection. You can ask Siri to play a specific artist, playlist, or 'the hottest songs from 1986'.



## **20. Want to change your Settings? Just search**

A searchable Settings app is another new feature that's so small, yet so incredibly helpful that we don't know why Apple hadn't included it before. Instead of pouring through each individual setting to find what we want to adjust, we can now just do a quick Spotlight-esque search to find what we need.

## **21. Drive, walk or take public transportation**

For years, Maps users had to rely on third-party apps to get reliable public transportation directions. Now anymore. Finally iOS 9 includes Transit view, which incorporates subway and bus schedules/routes. Transit, however, is only available in select cities: London, Berlin, Baltimore, Chicago, New York, Philadelphia, San Francisco, Washington, DC, Mexico City, Toronto, and 300 cities in China.

## **22. Articles are easy to find in News**

A few publishers are adopting Apple News Format to create interesting-looking articles in the News app with big images, animations, and videos. Luckily, it's easy to find all these articles by subscribing to the Apple News Selections channel.

## **23. Integration with Apple Watch Activity achievements**

For Apple Watch wearers only: it's pretty neat how the achievement medals in the Activity app are engraved with the date you earned them. Just swipe one with your finger to flip it over. It's a tiny change, but we get a kick out of it.

## 24. iPad only: Easy editing of long chunks of text

With iOS 9, you can place two fingers down on the keyboard and it instantly becomes a trackpad, letting you select large chunks of text with one swipe. The new tools on the QuickType bar help you format the text or cut/copy/paste it with one tap. We've never thought of the iPad as a viable replacement to my MacBook – until now.

## 25. iPad only: Picture-in-picture offers much-needed distractions

Back in school did you ever hide a comic inside a textbook to give the impression you were studying? iOS 9 gives the iPad a similar function with picture-in-picture. Now you can research a work project while watching Cartoon Network at the same time.







## iOS 9 on the iPad

The features iOS 9 is adding to the iPad

- OS 9 has made its way on to iPads and iPhones around the world. Here, we talk you through everything you need to know about iOS 9 on your iPad, including which models will get the new features coming in Apple's latest iOS, and tips on how to use those new features

### Compatible iPads

- iPad Air and Air 2,
- iPad 2, third- and fourth generation
- iPad mini, 2 and 3

## Will my iPad get multitasking?

While all of the above iPads are getting iOS 9, some of the best features require more power than the older models can offer. We are really excited about the Slide Over, Split View and Picture in Picture features, which means that productivity is much easier on Apple's tablet.

Here's a breakdown of which iPads will be able to run which feature:

### Slide Over

- iPad Air, Air 2
- iPad mini 2, 3

### Picture in Picture

- iPad Air, Air 2
- iPad mini 2, 3

### Split View

- iPad Air 2

### Slide Over

This allows you to open another app without leaving the one you're currently in. It'll mean that you can send a tweet, respond to a text message or jot something down in the Slide Over window, and then slide it away again to go back to what you were doing.

To use Slide Over, you can swipe from right to left on the righthand side of your iPad to see another app. It'll take up about a third of the screen. If you want to change the app that appears in Slide Over, you can do so by swiping down from the top of the screen.

## Split View

Split View is an iPad Air 2 exclusive feature that is a more powerful version of Slide Over, and is the fully-fledged split-screen multitasking we've been waiting for. It lets you run two apps side-by-side, with both of those apps available to interact with at the same time. That means you could be researching on the web using the Safari app and jotting down notes about the subject in the Pages app, for example.

Other examples given by Apple include working on a sketch with the reference photo beside it, writing a paper while copying citations from a book in iBooks, or looking at the Maps app while planning a holiday using TripAdvisor.



You can access the Split View feature by first swiping from the right of the screen to bring up Slide Over, and then dragging the divider between the two apps to the centre of the screen.

## Picture in Picture

The third and final multitasking feature coming to the iPad with iOS 9 is called Picture in Picture, which lets you watch a video or use FaceTime, while using another app. By pressing the Home button, the video or FaceTime screen will scale down and sit at the bottom corner of your display while you work on something else. You can move the floating video screen around or move it slightly offscreen if you only want to listen to the audio.

## QuickType

QuickType is another new feature coming to the iPad with iOS 9. You'll see functions such as copy and paste, add attachment and format text on the keyboard itself, along the top in a new Shortcut Bar. The Shortcut Bar will have different tools depending on the app you're using, and can be utilised by third-party apps.

## Easy text selection

Additionally, the new keyboard lets you use your touchscreen as a trackpad. You just need to place two fingers on the screen to activate it and they'll act as a cursor for quickly and easily selecting chunks of text, for example. This will make it easier to select and move text. A double-tap with two fingers will select the word on which the cursor is positioned, and a triple-tap will select an entire paragraph.



## Guide to iOS settings

The third part of our look at iOS

### **Use TouchID to authorize your purchases**

The settings for TouchID and Passcode are straightforward – which in itself is pretty remarkable when you think about the complex technology that's being used here. However, there are a few options that are worth looking at in a little more detail.

As you're probably aware, TouchID uses your fingerprint(s) as an alternative to your normal passcode when unlocking your iPhone. But that doesn't mean that you can forget about your passcode altogether – apart from anything else you'll need it every time you want to enter the

TouchID settings panel. Once you've got into these settings you can also tell your iPhone to use TouchID to authorize your purchases on iTunes or the App Store, which is a handy timesaver if you've got a strong-but-complicated password for your iTunes account.

## **Set up Touch ID**

If your iPhone has TouchID, then it will prompt you to scan your finger when you set the phone up for the first time. Don't forget, though, that you can add multiple fingerprints whenever you want. This is a good idea, as we've found that we prefer to use different fingers at different times. We use the thumb on our right hand when holding the iPhone, but use a different finger – and sometimes a different hand – when we've got the iPhone on a desk in front of us.

You can scan up to five fingers, which should be enough for most people, and you can also delete fingers as well. We've seen workarounds on the web that allow you to scan more than five fingers, but we wouldn't recommend doing that as it could muck up your iPhone's security settings.

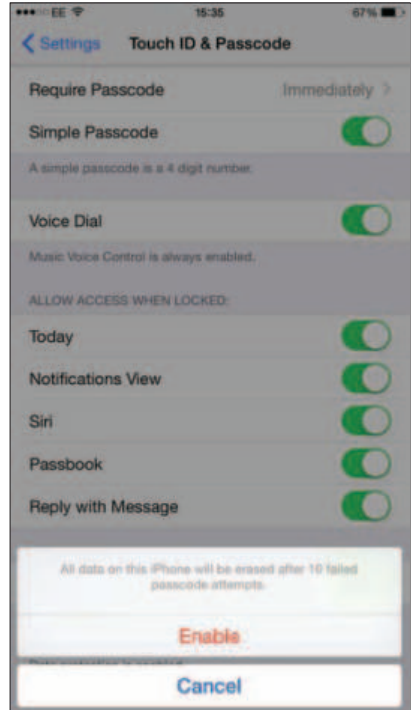
## **Changing your iPhone passcode**

Once you've set up TouchID it is possible to turn off your passcode altogether. But you should remember that the passcode isn't used just to unlock your iPhone. It also restricts access to many important settings on your iPhone, as well as passwords and even credit card details that you might have stored in Safari and other apps.

There's an option here to change your passcode if you want, and you can also turn off the 'simple'

four-digit passcode and use a longer passcode that can contain numbers, letters and symbols too. And, if you scroll right down to the bottom of this panel, you'll find the 'Erase Data' option – the ultimate security option that deletes all data on the iPhone after 10 failed attempts at guessing the password.

One other thing to remember is that, even with TouchID activated, you'll still be asked to enter your passcode each time you restart your iPhone after being completely turned off, or if you haven't used your iPhone for 48 hours.



## Decide what appears on the lock screen

This settings panel also includes a few options that aren't directly related to either TouchID or your passcode, but which do affect how the Lock screen works when your phone is still locked.

You can turn the Today and Notifications views on or off in order to prevent anyone from seeing recent messages that you might have received, and you can turn Siri off here too. The Passbook option can be turned off too, which ensures that no one else can use Passbook to spend your money or use your airline tickets (unless they've got your passcode or one of your fingers...).

## Privacy settings

The next section in iOS Settings is Privacy. This is a key set of features, obviously, but we've actually looked at some of these settings before, as the Privacy panel duplicates several of the settings that can be found in the Restrictions panel within General Settings. We covered the Location Services options when we looked at Restrictions earlier, so we don't need to repeat that information here.

However, your iPhone or iPad apps can share more than just location data. The standard apps that are built into iOS – including the Contacts, Calendar, Photos and Health, can share extensive personal data with other third-party apps that you install on your devices. Any app that wants access to your data – such as Google Maps asking for address info from Contacts – should ask your permission when you first install the app. However, keeping track of all the different apps that you install can get tricky after a while, so the Privacy settings shown here allow you to get a quick overview of all the info that you might be sharing.

## Find out what you are sharing

The iOS apps that can share your personal info are all listed in Privacy, and if you tap on the name of each app you can see exactly which other third-party apps have asked for permission to share your data.

Some of these might surprise you too – it might make sense for Google Maps to ask for address info from Contacts, but you probably didn't realise that Google Maps has a 'voice search' option that can control your microphone, too. That's a legitimate use for the microphone and, of course, a wonderful



company such as Google would never, ever dream of infringing anyone's personal privacy. But in the hands of someone less scrupulous your microphone could potentially be turned into a bugging device that listens to every word you say.

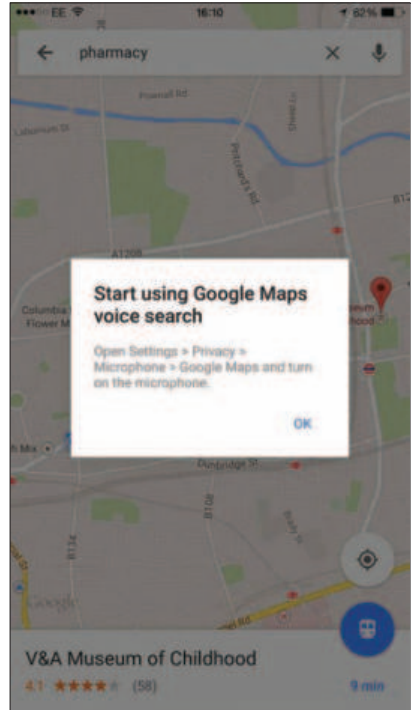
So it's worth checking these Privacy settings every now and then, and turning off any sharing options that don't seem to be absolutely essential.

### Let apps share data

It's also worth remembering that the ability to share data between apps is a two-way street. Apple's Health app, for instance, allows third-party health apps to both 'read' and 'write' data. We've got the Nike Running app on our iPhone and this can 'write' my workout and running data to Health, so that Health can compile a better overall picture of our physical condition. However, the Nike app can also 'read' other data, such as our heart rate, from Health and let us know when we're overdoing things a bit.

### Cloud options

It may sit quite a long way down the list of options in the iOS Settings panel, but iCloud is now one of the key technologies that sits right at the heart



of both iOS and Yosemite. When the service was first launched back in 2011, iCloud was really just designed for syncing emails and photos between your iPhone and your Mac. However, it has now matured into a sophisticated cloud storage system that can share all sorts of personal information across multiple devices.

One of the most important new features that was added to iCloud in iOS 8 is Family Sharing. This allows one person – known as the ‘organiser’ – to create a special ‘family group’, and to then invite up to five family members to join that group. Family Sharing works on devices running iOS 8, Yosemite on Macs, and even on PCs running Windows (though you’ll need to download the iCloud for Windows software from the Apple website).

The only restriction here is that the organiser has to be an adult, with a credit card linked to their Apple ID account. The organiser agrees to pay for any purchases made by members of the family group, and any purchases made by any member of the group are automatically made available to everyone else in the group. But don’t worry – there are options within Family Sharing that can prevent your family going crazy with your credit card.

## **Adding family and approving purchases**

Once you’ve created a family group you can then send invitations to the other family members that you want to include in the group. This requires that each family member has their own Apple ID account. In the past, children under the age of 13 weren’t allowed to create Apple IDs on their own, but iOS 8 introduced a new system that allows

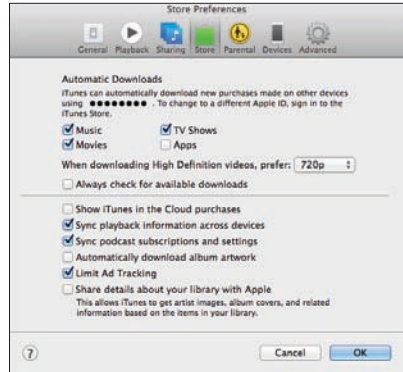
parents to create and control special Apple ID accounts for younger children. There is also a separate option for creating Apple ID accounts for students and older children (see here for more details on setting up Apple ID accounts for children).

These accounts for children also include an option called Ask To Buy that gives parents the ability to approve or block the purchases that their children make. When the child tries to make a purchase – including items that are free to download – they will see a message on the screen of their iOS device telling them that their parent will be informed of the purchase, and asking them if they want to change their mind before going ahead.

If they do go ahead with the purchase then another message will be sent to the parent/organiser giving them the option of allowing or blocking the purchase. The Ask To Buy feature is automatically turned on for all children under the age of 13, but you can leave it turned off for older children and other adults in the group.

## Share apps and iTunes purchases in a Family

The Ask To Buy option allows you to stop young children from making unsuitable purchases – such as violent action games, or blood-spattered episodes of *Game Of Thrones*. However, any purchases made by one member of the family group



can be shared with everyone else in the group, which means that purchases made by an adult could still be seen by a child. If you want to prevent this then you'll need to use the Restrictions settings on your child's personal iOS device to set age limits for video, games and other material.

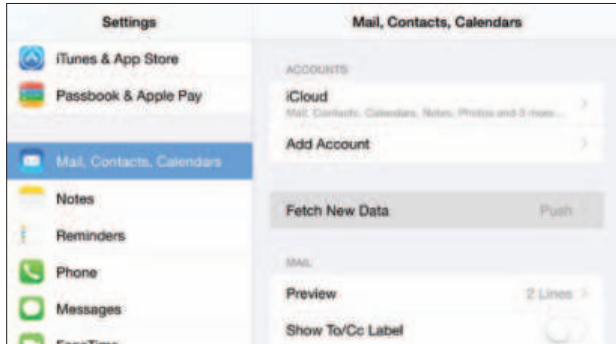
It's also possible to review the purchases made by members of your family group to make sure that nothing unsuitable gets through accidentally. If you tap the More button at the bottom of the screen in the iTunes Store app, you'll see an option to view all your purchases, including those made by other members of your family group.

## **Shared Photos and Calendars**

Family Sharing isn't just about spending money on the iTunes Store. When you set up your family group you automatically create a new photo album that is shared by everyone on the group. All group members can upload and share photos, and there's an option to receive a notification whenever other people in the group upload photos too.

Most Family Sharing features require iOS 8, but the photo-sharing features work on iOS 7 as well, so kids with older iPads and iPod Touch models can still share photos without you needing to buy a new device that can handle iOS 8.

You can also create a shared calendar that works in a similar fashion, allowing family members to add events and receive notifications for birthdays, appointments and other events. The Reminders app is included here too, so you can send a quick reminder to get some milk without needing to use the full-blown Calendar app.



## Track locations

Your kids will no doubt be thrilled to hear that Family Sharing allows you to keep track of their movements as well. Each person that joins the family group has the option of sharing their location information with the rest of the group.

This location information can be found in a number of different apps, including Find My Friends and Messages, as well as in Find My iPhone in case anyone loses a device while they're out and about.

You can turn this option on or off whenever you want, so that's something that you'll need to discuss with your kids. However, for younger children, it is possible to lock the settings for Location Services, using the password-protected Restrictions settings that we've looked at before. And even if a family member chooses not to share their precise location information, it's still possible to activate a special Lost Mode on iOS devices that can lock the device to protect your personal information.

Lost Mode can also attempt to track the device – but can only do so when it's online with Internet access, so it's best to activate location sharing whenever possible for maximum security.

